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CONGRESS OF THE UNITED STATES
CONGRESSIONAL BUDGET OFFICE

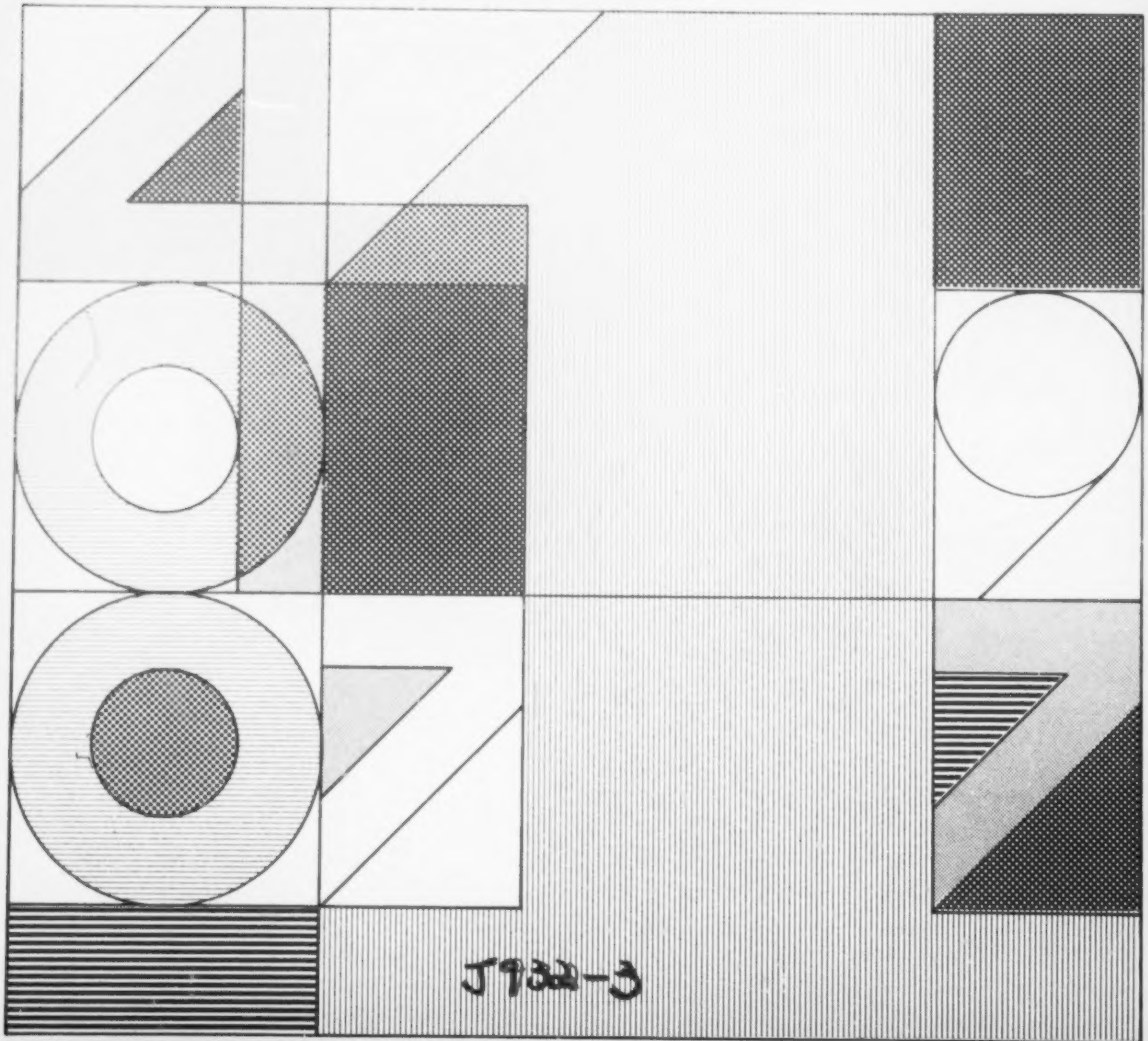
JANUARY 1989

J932-3

The Economic and Budget Outlook: Fiscal Years 1990-1994

A Report to the Senate and House Committees on the Budget—Part I

As Required by Public Law 93-344



J932-3

1989 ANNUAL REPORT

THE ECONOMIC AND BUDGET OUTLOOK:
FISCAL YEARS 1990-1994

The Congress of the United States
Congressional Budget Office

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Washington, D.C. 20402

NOTES

Unless otherwise indicated, all years referred to in Chapter I are calendar years and all years in Chapter II are fiscal years.

Unemployment rates throughout the report are calculated on the basis of the civilian labor force.

Details in the text and tables of this report may not add to totals because of rounding.

Figures showing periods of recession (indicated by a shaded area) reflect the peak (P) and trough (T) of the recession.

The Balanced Budget and Emergency Deficit Control Act of 1985 (popularly known as Gramm-Rudman-Hollings) is also referred to in this volume more briefly as the Balanced Budget Act. This act was amended by the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 (the Reaffirmation Act).

PREFACE

This volume is one of a series of reports on the state of the economy and the budget issued periodically by the Congressional Budget Office (CBO). In accordance with CBO's mandate to provide objective and impartial analysis, the report contains no recommendations.

The analysis of the economic outlook presented in Chapter I and the analysis of economic growth in Chapter III were prepared by the Fiscal Analysis Division under the direction of Frederick C. Ribe and Robert Dennis. Chapter I was written by John F. Peterson and Victoria Farrell, and Chapter III was written by John Sabelhaus and John R. Sturrock, with a contribution from Paul Cullinan of the Budget Analysis Division. The analysis was carried out by Trevor Alleyne, Douglas R. Hamilton, George R. Iden, James Kiefer, Angelo Mascaro, Frank S. Russek, Jr., Matthew A. Salomon, and Stephan S. Thurman. Research assistance was provided by Jeanne Dennis, Nicholas Dugan, and Patricia Phill.

The baseline outlay projections were prepared by the staff of the Budget Analysis Division under the supervision of James L. Blum, C.G. Nuckols, Michael A. Miller, Charles E. Seagrave, Robert A. Sunshine, and Paul N. Van de Water. The revenue estimates were prepared by the staff of the Tax Analysis Division under the direction of Rosemary D. Marcuss and Kathleen M. O'Connell.

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Paul L. Houts supervised the editing and production of the report, assisted by Nancy H. Brooks. Major portions were edited by Francis S. Pierce and Sherry Snyder. The authors owe special thanks to Debra Blagburn, Linda Brockman, Marion Curry, Janice Johnson, Dorothy J. Kornegay, and L. Rae Roy, who typed the many drafts. Kathryn Quattrone prepared the report for publication.

James L. Blum
Acting Director

January 1989

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SUMMARY

The American economy is making almost full use of both its labor force and its capital stock. The latest unemployment rate is 5.3 percent, the lowest level in 14 years, and factories are operating at high levels of capacity. Because these high operating rates threaten to increase inflation, monetary restraint is likely to slow the economy's growth from recent high rates to a more sustainable trend. As a result, further reductions in the federal budget deficit will probably be modest if spending reductions or tax increases do not take place. The budget deficit for 1989 is now estimated by the Congressional Budget Office (CBO) to be $155 billion, about what it was in 1988. Under current budgetary policies, the deficit is projected to decline slowly thereafter--to $141 billion in 1990, $140 billion in 1991, and $122 billion in 1994. These figures exceed by increasing amounts the deficit targets specified in the Balanced Budget Reaffirmation Act of 1987 (Public Law 100-119), as shown in the Summary Figure.

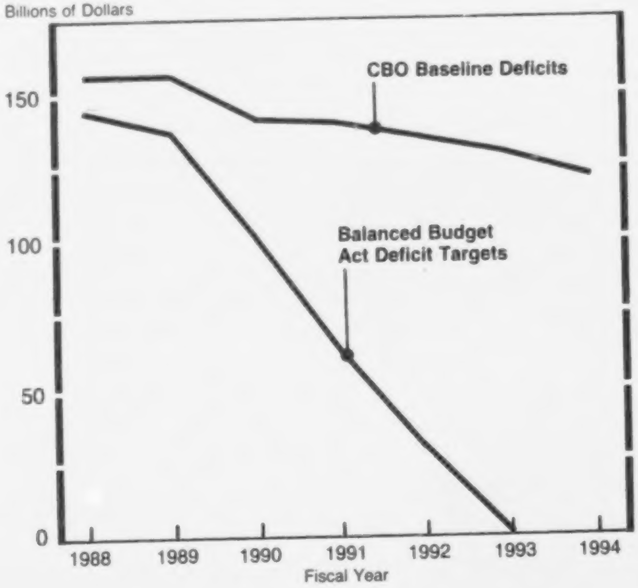
THE BUDGET OUTLOOK

CBO's baseline budget projections portray what would happen if current budgetary policies were continued without change. They are not a forecast of future budget outcomes, since the future will include many policy changes. The methodology for the baseline projections follows closely the specifications contained in the Reaffirmation Act. For revenues and entitlement spending, the baseline generally assumes that laws now on the statute books will continue. For defense and nondefense discretionary spending, the projections for 1990 through 1994 are based on the 1989 appropriations, increased only to keep pace with inflation. As a result, the baseline makes no explicit allowance for activities not included in the 1989 appropriations, such as conducting the decennial Census of Population, building the manned space station or the superconducting super collider, renewing long-term subsidized housing contracts that are about to expire, buying more B-2 bombers, or modernizing nuclear weapons plants.

CBO's baseline budget projections and the underlying economic assumptions are presented in Summary Table 1. The assumption of no real growth in discretionary spending causes both total outlays and the deficit to decline in relation to the growing economy. Outlays fall from an estimated 22.2 percent of gross national product (GNP) in 1989 and 1990, to 22.0 percent in 1991, and 21.1 percent in 1994. Revenues, on the other hand, are projected to increase from 19.2 percent of GNP in 1989 to 19.6 percent in 1990 and 1991, then taper off to 19.4 percent by 1994. The 1990 increase results primarily from the income tax surcharge on Medicare beneficiaries for catastrophic health insurance, a scheduled increase in Social Security payroll taxes, and the phasing in of certain provisions of the Tax Reform Act of 1986. The deficit falls from 3.0 percent of GNP in 1989 to 2.6 percent in 1990 and 1.7 percent in 1994. This improvement, however, falls short of that required by the Reaffirmation Act, which mandates a balanced budget by 1993.

For 1990, the deficit target is $100 billion, and the deficit must be held below $110 billion to avoid automatic spending reductions, or sequestration. CBO's deficit estimate of $141 billion exceeds the tar-

Summary Figure. Baseline Deficits and Targets



Source: Congressional Budget Office.

SUMMARY TABLE 1. BASELINE BUDGET PROJECTIONS AND UNDERLYING ASSUMPTIONS

	1988	1989	1990	1991	1992	1993	1994
Budget Projections (By fiscal year)[a]							
In billions of dollars							
Revenues	909	983	1,069	1,140	1,209	1,280	1,359
Outlays	1,064	1,138	1,209	1,280	1,344	1,410	1,480
Deficit	155	155	141	140	135	129	122
Deficit Targets[b]	144	136	100	64	28	0	--
As percentages of GNP							
Revenues	19.0	19.2	19.6	19.6	19.5	19.5	19.4
Outlays	22.3	22.2	22.2	22.0	21.7	21.4	21.1
Deficit	3.2	3.0	2.6	2.4	2.2	2.0	1.7
Economic Assumptions (By calendar year)							
GNP (Billions of current dollars)	4,859	5,209	5,542	5,902	6,281	6,685	7,117
Real GNP Growth (Percent change)	3.8	2.9	2.1	2.2	2.2	2.3	2.3
Implicit GNP Deflator (Percent change)	3.4	4.2	4.2	4.2	4.1	4.1	4.1
CPI-W (Percent change)	4.0	4.9	4.9	4.6	4.4	4.4	4.4
Civilian Unemployment Rate (Percent)	5.5	5.5	5.5	5.5	5.6	5.6	5.6
Three-Month Treasury Bill Rate (Percent)	6.7	7.9	7.1	6.7	6.4	6.1	5.9
Ten-Year Government Note Rate (Percent)	8.9	9.3	9.0	8.6	8.1	7.7	7.4

SOURCE: Congressional Budget Office.

a. The baseline projections include Social Security, which is off-budget.

b. The Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 established targets for 1988 through 1993.

SUMMARY TABLE 2. CHANGES IN CBO DEFICIT PROJECTIONS SINCE AUGUST (By fiscal year, in billions of dollars)

	1989	1990	1991	1992	1993	1994
August 1988 Projections[a]	148	136	131	126	121	121
Changes for:						
Enacted legislation	1	1	1	b	-1	-5
Updated economic assumptions						
Revenues[c]	-5	-6	-8	-7	-5	-5
Net interest	5	4	4	4	3	1
Other outlays	b	b	1	2	2	2
Subtotal	b	-3	-3	-1	b	-2
Technical reestimates						
Revenues[c]	1	2	2	1	b	b
National defense	-2	-2	-2	-2	-1	-1
Deposit insurance	7	8	10	6	5	5
Other outlays	1	-1	2	5	5	2
Subtotal	7	6	11	9	9	8
Total changes	7	5	9	9	8	1
January 1989 Projections[a]	155	141	140	135	129	122

SOURCE: Congressional Budget Office.

a. The baseline projections include Social Security, which is off-budget.

b. Less than $500 million.

c. Revenue increases are shown with a negative sign because they reduce the deficit.

get by $41 billion. The Reaffirmation Act, however, gives CBO only an advisory role in the sequestration process. Under the terms of the act, the Director of the Office of Management and Budget (OMB) alone determines whether or not automatic spending cuts are necessary and how large the cuts must be. In President Reagan's fiscal year 1990 budget, OMB estimated that the 1990 base deficit for purposes of the Balanced Budget Act is $126 billion, ignoring statutory limitations on spendout rates. If OMB comes up with a similar estimate this summer, only $16 billion in deficit reduction will be required to avoid sequestration.

CBO's new baseline budget projections reflect all legislation enacted during the second session of the 100th Congress and are based on up-to-date economic and technical estimating assumptions. The new projections are only modestly higher than those published in CBO's August 1988 report (see Summary Table 2). The largest revisions stem from changes in technical estimating assumptions, which add between $6 billion and $11 billion annually to the baseline deficits. Most of this increase is attributable to higher expected outlays for the deposit insurance activities of the Federal Savings and Loan Insurance Corporation (FSLIC) and the Federal Deposit Insurance Corporation. Although FSLIC has virtually no cash on hand, it is piecing together resources from a variety of sources to enable it to continue closing and selling insolvent institutions. While the new baseline has added more than $30 billion to FSLIC outlays over the next six years, mostly made possible by borrowing from the Federal Home Loan Bank system, thrift institutions are likely to need even more assistance during the early 1990s. How this additional assistance affects the budget would depend, however, on the specifics of the financing plan.

Recently enacted legislation adds $1 billion or less per year to the deficit through 1992, but decreases it by $1 billion in 1993 and $5 billion in 1994, primarily because of lower defense appropriations. Changes in the economic outlook reduce the deficit by no more than $3 billion in any year. Revenues are higher by $5 billion to $8 billion per year, but the gain in revenue is largely offset by the increased costs of debt service resulting from higher interest rates.

THE ECONOMIC OUTLOOK

The long-run rate of growth of the economy's productive capacity is about 2½ percent a year. In the aftermath of a recession, when much capacity is unused, the economy can easily grow more rapidly than this trend. But after six years of expansion, the American economy is now employing almost all its capacity. If the economy were to continue growing at its recent rapid rate, inflation would probably increase. The Federal Reserve has therefore sought to slow economic growth to a pace that is sustainable over the long haul.

CBO's short-term economic forecast for 1989 and 1990 is shown in Summary Table 3. The forecast assumes that the Federal Reserve will be successful in holding the economy's growth to a rate that will avoid a sharp increase in inflation, and that the 1990 deficit will be reduced to satisfy the Reaffirmation Act's requirements. The rate of growth of real gross national product, estimated to be 2.6 percent during the four quarters of 1988, is expected to rise to 2.9 percent in 1989 and drop back to 2.2 percent in 1990. Excluding the farm sector, which was hard hit by last summer's drought, the growth rate declines more smoothly--from 3.5 percent in 1988 to 2.1 percent in 1989 and 2.2 percent in 1990. Unemployment is expected to remain near its current level of about 5½ percent. Net exports and business fixed investment are expected to be the major sources of economic expansion in the next two years. Because of the temporary strength of the dollar in mid-1988, however, the rate of improvement in real net exports is likely to be slower in 1989 and 1990 than it was in 1988.

CBO projects that consumer price inflation will increase from 4.3 percent in 1988 to 5.0 percent in 1989, both from increases in food prices and from higher import prices. Because wage growth is likely to increase, inflation is not expected to subside much in 1990. Interest

SUMMARY TABLE 3. CBO FORECAST FOR 1989 AND 1990
(By calendar year)

	Actual 1987	Estimated 1988	Forecast 1989	Forecast 1990
Fourth Quarter to Fourth Quarter (Percent change)				
Real Gross National Product	5.0	2.6	2.9	2.2
Implicit GNP Deflator	3.1	4.0	3.9	4.4
Consumer Price Index (CPI-W)	4.5	4.3	5.0	4.8
Calendar-Year Average (Percent)				
Three-Month Treasury Bill Rate	5.8	6.7	7.9	7.1
Ten-Year Government Note Rate	8.4	8.9	9.3	9.0
Civilian Unemployment Rate	6.2	5.5	5.5	5.5

SOURCE: Congressional Budget Office.

rates will remain high in the first half of 1989, as the Federal Reserve continues its efforts to slow the growth of demand to a sustainable rate. Rates are forecast to ease somewhat later in 1989 and in 1990, reflecting the central bank's success in holding growth to the range of 2 percent to 2½ percent.

For 1991 through 1994, CBO's economic assumptions are not a forecast of future economic conditions but are projections based on past trends. Real GNP is projected to grow at an average annual rate of 2.2 percent, as shown in Summary Table 1, and the unemployment rate remains close to current levels. The inflation rate as measured by the Consumer Price Index is projected to decline moderately after 1990. Interest rates are projected to decline throughout the 1991-1994 period until they reach levels consistent with the average of inflation-adjusted (real) interest rates since 1973.

BUDGET DEFICITS AND ECONOMIC GROWTH

The Balanced Budget Act requires that revenues and outlays of the two Social Security trust funds--Old-Age and Survivors Insurance and Disability Insurance--be shown as off-budget, a treatment that highlights their contributions to the totals. With total income of the two funds exceeding benefits and other costs, the Social Security surplus grows from $56 billion in 1989 to $117 billion in 1994, as shown in Summary Table 4. The on-budget deficit, on the other hand, rises from $211 billion in 1989 to $239 billion in 1994. An increasing portion of the Social Security surplus, however, results from interest income earned on the growing trust fund balances, which are invested in government securities. Social Security's interest income grows from $11 billion in 1989 to $45 billion in 1994. These interest payments are an intragovernmental transaction: they contribute to the on-budget deficit and to the off-budget surplus identically. Ignoring these intragovernmental payments, the non-Social Security deficit declines slightly, and the Social Security surplus rises less rapidly.

Accurately measuring the government's borrowing needs and its impact on the economy requires counting all revenues and spending. Recognizing this, the Balanced Budget Act adopted the total deficit--including off-budget programs--as the key measure in judging progress toward reducing the deficit. A balanced total budget, however, is not necessarily an appropriate longer-term target. Some analysts believe that, because much federal spending has long-term benefits, limited deficits are acceptable. Others argue that the federal government should add to national saving by moving the total budget into surplus after 1993.

Chapter III of this report explores the potential contribution of deficit reduction to economic growth. Current demographic projections imply that American living standards will improve less rapidly during the first half of the twenty-first century than during the second half of the twentieth century. In large part, this slower growth is caused by the retirement of the post-World War II baby-boom generation. A smaller part of the population will be working, and what they produce will have to be shared with the increasing part of the population who will be retired. As a result, consumption of goods and services per capita, which has been growing at about 1.9 percent a year since 1950, may increase by only 1.3 percent a year after 2000.

SUMMARY TABLE 4. ON- AND OFF-BUDGET TOTALS
(By fiscal year, in billions of dollars)

	1989	1990	1991	1992	1993	1994
			Off-Budget (Social Security)			
Revenues	267	290	312	333	355	379
Outlays	211	222	234	243	252	261
Surplus	56	68	79	90	103	117
			On-Budget (All Other Programs)			
Revenues	715	779	828	876	925	980
Outlays	926	988	1,047	1,101	1,158	1,219
Deficit	211	209	219	225	233	239
			Total			
Revenues	983	1,069	1,140	1,209	1,280	1,359
Outlays	1,138	1,209	1,280	1,344	1,410	1,480
Deficit	155	141	140	135	129	122

SOURCE: Congressional Budget Office.

One way of maintaining the growth of consumption would be to pursue policies that expand the labor force--for example, by delaying retirement or increasing immigration. Chapter III focuses on another approach--increasing national saving by moving the federal budget into surplus after 1993. If the federal government were to run a surplus of 2 percent of GNP after 1993 instead of a balance, private and public consumption would initially be reduced by a little more than 2 percent, as the government reduced spending or increased taxes. The higher saving would raise capital accumulation and output, and eventually consumption would also increase. How long this would take, and how much consumption per capita would increase in the long run, cannot be estimated with certainty. Depending on the contribution of additional investment to the economy's output, between five and ten years would be required for per capita consumption to be as high as it would have been had the government not run a surplus. By the year 2040, the increase in per capita consumption could range from 2 percent to 14 percent.

These technical calculations, of course, cannot provide a final answer to the question of how much the government should contribute to national saving. Reducing the deficit, or moving the budget into surplus, involves sacrificing consumption now to increase well-being in the future. The choice is ultimately a political one.

CHAPTER I

THE ECONOMIC OUTLOOK

The U.S. economy registered strong growth in 1988, without a rise in inflation. After six years of expansion from the bottom point of the 1981-1982 recession, the economy is now close to a full use of its productive resources. Labor markets are generally tight, and the unemployment rate is at a 14-year low. Factories are operating at high rates, and signs indicate that inflationary pressures are building, though some sectors of the economy are depressed. For the economy as a whole, however, noninflationary growth above the increase in the nation's productive capability appears to be limited.

Although the underlying inflation rate has not yet accelerated, the Federal Reserve Board is concerned that it might, and has sought to slow economic growth. Early in 1988, when it became clear that the stock market crash had not severely weakened the economy, the central bank reinstituted a moderately restrictive monetary policy. Current indications are that the economy has already slowed slightly from the rapid pace set in 1987 and early 1988, but it still appears to be growing at a faster pace than the Federal Reserve would prefer. Restrictive monetary policy is therefore likely to prevail until economic activity slows.

While the process of slowing the rate of expansion appears to be on track, policymakers are concerned that such slowing will not occur smoothly. Continued volatility in the dollar may complicate the Federal Reserve's effort to slow growth. Moreover, the economy will be adjusting to the recent reductions in the federal deficit mandated by the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 (the Reaffirmation Act), as well as to a continued shift in the composition of demand toward exports and investment. The economy underwent such changes in 1988 and should be readily able to continue to adapt during the forecast period. But replacing consumption, residential construction, and government purchases with net exports and business investment may be more difficult to accomplish in a period of slow growth.

The Congressional Budget Office's (CBO's) short-term economic forecast assumes that the provisions of the Reaffirmation Act are met, and that the slowing of economic growth will occur smoothly.[1] CBO forecasts that real growth will slow during 1989 to a rate that will keep inflation from worsening, and remain near that rate in 1990. Given such growth, the unemployment rate will hold steady at about 5.5 percent for the forecast period. Consumer price inflation is expected to increase slightly this year--to about 5 percent--and then continue at that rate during 1990.

FISCAL AND MONETARY POLICY

The Congress and the Administration can affect overall domestic saving through fiscal policy--that is, by changing federal spending and tax rules. Increasing saving by reducing the budget deficit helps slow the expansion of overall domestic demand, and is called "tight" or "restrictive" fiscal policy for that reason. The Federal Reserve, for its part, can manipulate economic growth through monetary policy--changes in short-term interest rates and monetary aggregates. A restrictive monetary policy comes about through increases in rates and slowing of money growth. Monetary policy can also affect the level of the dollar by carefully coordinating changes in interest rates with those of other countries, and by buying and selling dollars in foreign-exchange markets--usually in coordination with other central banks.

Fiscal policy is neither very contractionary nor expansionary this year, but monetary policy is likely to dampen economic growth. For 1990, however, fiscal policy will be restrictive under current budget policies, and it will become much more restrictive if policies for 1990 are changed to meet the Reaffirmation Act targets. Monetary policy has been relatively tight since late March of 1988, and the Federal Reserve is likely to continue to be restrictive unless it sees indications of slower economic growth.

---

[1] The baseline deficit projections presented in Chapter II do not incorporate the policy changes necessary to meet the provisions of the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987. In this chapter, however, for the purposes of the economic forecast, CBO assumes that such policy changes will be carried out.

TABLE I-1. CHANGES IN THE STANDARDIZED-EMPLOYMENT DEFICIT (By fiscal year, on a budget basis)

	1987	1988	1989	1990	1991	1992	1993	1994
	Changes in Billions of Dollars							
Baseline Deficit	-70	33	6[b]	-15	-4	-8	-8	-10
Deficit Reflecting Reaffirmation Act Targets[a]	-70	33	6	-56	-39	-39	-31	n.a.
	Percentage-Point Changes in Deficit Measures as a Percentage of Potential GNP							
Baseline Deficit	-1.8	0.5	-0.1[b]	-0.5	-0.2	-0.3	-0.3	-0.3
Deficit Reflecting Reaffirmation Act Targets[a]	-1.8	0.5	-0.1	-1.2	-0.8	-0.7	-0.5	n.a.

SOURCE: Congressional Budget Office.

NOTES: A negative sign indicates fiscal restraint--that is, a movement toward a smaller deficit or deficit-to-GNP ratio.

n.a. = not applicable.

a. These estimates of the standardized-employment deficit assume full implementation of whatever deficit reductions are needed to achieve the budget targets for 1990 through 1993 set forth in the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987.

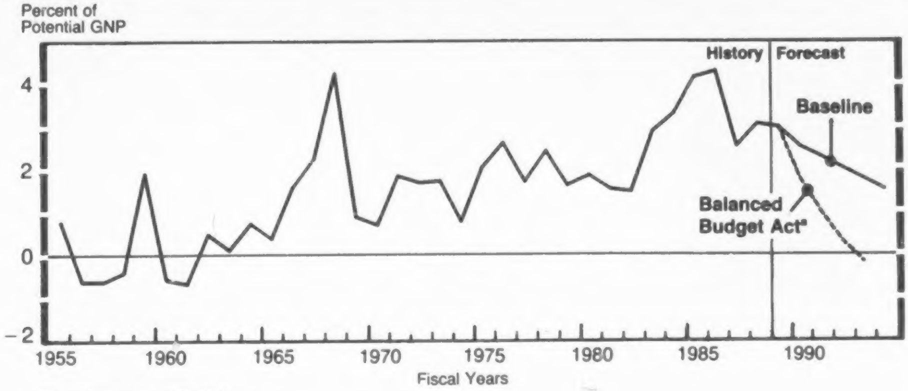
b. Although the standardized-employment deficit increases in 1989, it falls as a percentage of potential GNP.

Fiscal Policy

CBO now estimates that under current budgetary policies the federal deficit will amount to $155 billion this fiscal year and $141 billion in fiscal year 1990. Both of these estimates are above the deficit targets set forth in the Reaffirmation Act. Even though the 1989 target of $136 billion will not be attained with current policies, the act does not require more deficit reduction for this year. A large deficit reduction is needed, however, to meet the 1990 target of $100 billion; otherwise, automatic spending reductions will become effective.

The Short-Run Outlook. Because both federal revenues and outlays have cyclical components that make the budget deficit larger during

Figure I-1. The Standardized-Employment Deficit



[a]See Footnote a, Table I-1.

SOURCE: Congressional Budget Office.

periods of economic slack, the change in the structural or "standardized-employment" budget is a better measure of the effect of discretionary fiscal policy on aggregate demand.[2] The structural budget is an estimate of revenues and spending that would occur if the economy were continuously operating at its potential. A number of analysts also argue that measures of discretionary fiscal policy should exclude net interest payments, since these payments are obligations over which neither the Congress nor the Administration can exercise control.

The standardized-employment deficit as a percentage of potential gross national product (GNP) will not change significantly this year, whether calculated with or without net interest payments. Under current tax and spending policies, fiscal policy will be restrictive in 1990, but much less restrictive than it was on average during 1987 and 1988 (see Table I-1 on page 3 and Figure I-1 above). Fiscal policy would be considerably more restrictive in 1990 if the budget target were met.

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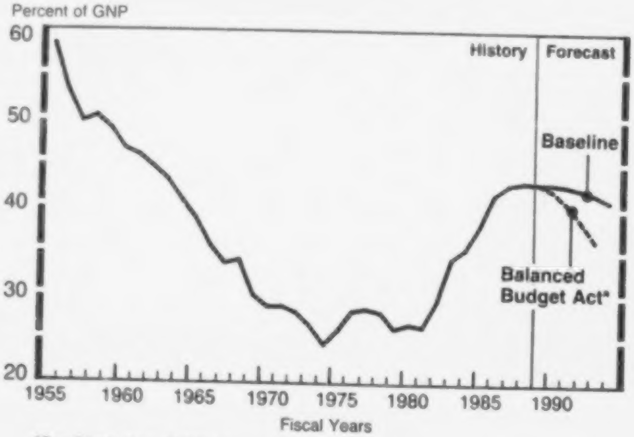
[2] The effect of fiscal restraint on incentives to work and save may depend on the way in which the deficit is reduced--for example, whether by raising taxes or by reducing spending. These differing effects of fiscal policy on economic growth are not reflected in the standardized-employment deficit.

The Long-Term Outlook. Under baseline assumptions--that is, the current budgetary policies and the economic outlook described in this report--the standardized-employment budget deficit would fall as a percentage of potential GNP, from 3.1 percent in 1988 to 2.3 percent in 1991 and to 1.5 percent in 1994. If the targets of the Reaffirmation Act are achieved, the federal deficit will be eliminated by 1993 and the standardized-employment deficit will be in surplus. Even under baseline assumptions, the publicly held federal debt would fall relative to GNP after 1990. The decline would be faster if the deficit were reduced below the baseline deficit assumptions (see Figure I-2).

Although some policymakers have argued that the fiscal deficit of the federal government should be measured by a budget calculation that excludes the Social Security surplus, the total deficit is the best single measure of the effect of fiscal policy on the economy. The main measures of fiscal policy discussed in this report are those based on the budget as defined for purposes of the Reaffirmation Act, and this definition includes the activities of the Social Security trust funds. In the next few years, the Social Security program will run large surpluses, while the rest of the budget will run deficits, even if the overall deficit is reduced according to the Reaffirmation Act guidelines. Those who maintain that the Social Security surpluses should be excluded argue that the total budget should be in surplus to increase national saving and increase the nation's future ability to support

Figure I-2.
Publicly Held
Federal Debt



[a]See Footnote a, Table I-1.

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

the large increase in the elderly population. The need to reduce the deficit enough to run a surplus on the total budget would be emphasized by eliminating Social Security surpluses from the deficit calculation. In terms of the impact of the federal budget on private credit markets and on national saving, however, it is not important which part of the budget is responsible for an overall deficit. This point is discussed at greater length in Chapter III.

Long-Run Effects of Fiscal Policy. Significant progress toward a smaller federal deficit--if it is not accomplished in a way that adversely affects incentives to work and save--would be likely to reduce interest rates and the trade deficit, and to improve living standards in the long run. The short-run pain of deficit reduction should be compared with these benefits. Deficit reduction could lead to these results by diverting private savings from its current financing of public consumption to investments in this country and abroad, and also by allowing domestic consumption to match production more closely.

Monetary Policy

Since early 1987, the Federal Reserve has been concerned about the possibility of an increase in inflation, and inflation is likely to remain its primary concern for the near future.[3] Monetary policy was restrictive in 1987 until the stock market crash forced the Federal Reserve to focus on stabilizing the financial markets and preventing an economic collapse. By April 1988, however, as evidence accumulated that the pace of economic growth had not been severely affected by the crash, the Federal Reserve resumed its effort to slow the economy to a more sustainable rate of growth.

Monetary Policy in 1988. At the end of March, as fears eased about the economic consequences of the stock market crash, the Federal Open Market Committee (FOMC) returned cautiously to a policy of monetary restraint reflected in higher short-term interest rates. Tightening continued as evidence of the economy's resilience accumulated. The federal funds rate (the rate at which banks borrow on a short-term basis from one another) rose from 6.6 percent in March to

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[3] See "Record of Policy Actions of the Federal Open Market Committee: Meeting Held on November 1, 1988" (December 16, 1988).

7.8 percent in July. In early August, the discount rate (the rate at which banks borrow reserves from the Federal Reserve) was increased from 6 percent to 6.5 percent. The FOMC appears to have tightened policy further late in 1988, as the economy continued to exceed the rate of growth that the Federal Reserve perceived to be noninflationary. As a result, the federal funds rate has risen to over 8½ percent and has shown a wider spread over the discount rate than was true in 1987 (see Figure I-3).

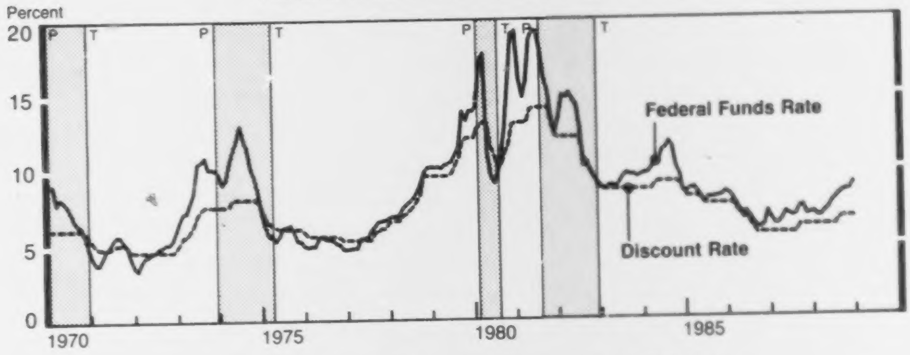
Interest rates rose in 1988 relative to 1987. The 90-day Treasury bill rate rose from 5.7 percent in March to 8.0 percent in December. The rise in longer-term yields was less pronounced; the rate on 10-year Treasury constant-maturity bonds, for example, rose from 8.4 percent in March to 9.3 percent in August, and was 9.1 percent at the end of the year. Most of the rise in short-term interest rates is the result of Federal Reserve tightening, the continuation of economic growth, and the rise in expectations of near-term inflation. With nominal three-month Treasury bill rates having risen faster than inflation, real interest rates also rose (see Figure I-3). Nominal long-term Treasury and corporate AAA rates rose less than short-term nominal rates, partly because tightening monetary policy reduced expectations of long-term inflation, and partly because of a flight to quality from high-yield corporate to AAA-rated corporate and Treasury securities. (The quality of some corporate debt rated below AAA has come under question since leveraged buyouts increased the perceived risk of default.)

Money growth, measured by M2 and M3, slowed since mid-1988, but the monetary aggregates remain near the mid-point of their 1988 target range of 4 percent to 8 percent. For 1989, the Federal Reserve has tentatively set the M2 range at 3 percent to 7 percent, and the M3 range at 3.5 percent to 7.5 percent. While the Federal Reserve uses the growth of these aggregates in assessing monetary policy, it does not currently emphasize these measures. Changes in exchange rates are also taken into account. For most of 1988, however, they appeared to have much less importance in formulating monetary policy than did developments in inflation and economic growth.

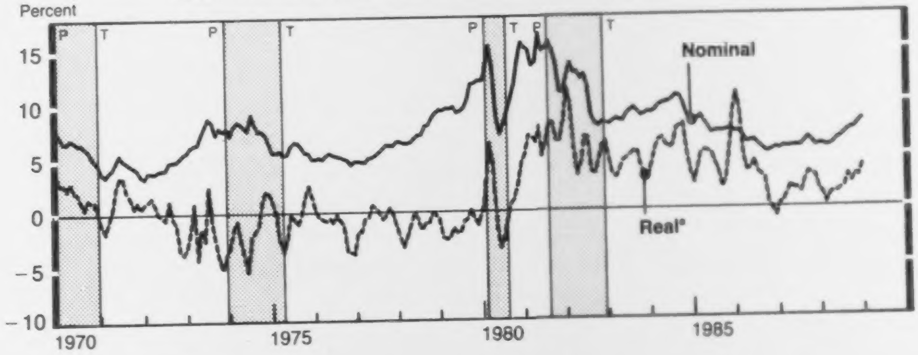
Outlook for 1989. The Federal Reserve's major concern will continue to be inflation, which requires reducing real growth to a more sus-

Figure I-3. Interest Rates

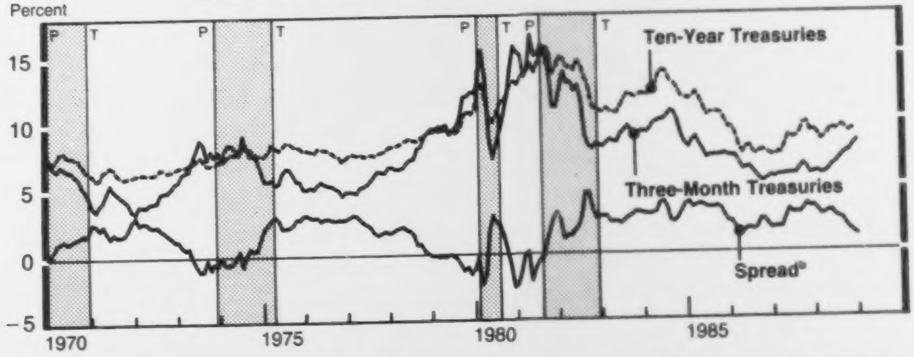
Federal Funds and Discount Rates



Nominal and Real Three-Month Treasury Bill Rates



Spread Between Long and Short Treasury Rates



SOURCES: Congressional Budget Office; Federal Reserve Board; Department of Labor, Bureau of Labor Statistics.

[a] The real three-month treasury bill rate is the nominal rate less the annual rate of inflation over the next three months as measured by the consumer price index.

[b] Ten-year constant-maturity treasury bond rate less three-month treasury bill rate.

tainable pace. Interest rates may not have to increase more to accomplish that goal, but they will prorobably remain high for the first half of this year. Monetary policy will be primarily affected by how the Federal Reserve interprets reports on economic growth and the underlying rate of inflation. Two other important factors, however, may also influence Federal Reserve policy: the state of financial institutions and markets, and the behavior of the dollar.

The state of financial institutions and markets could act as a constraint on the degree to which monetary policy will be tightened in 1989. A sharp upturn in market interest rates would further damage an already troubled thrift industry, as well as increase the debt burden on developing countries. Another constraint stems from the recent increase in leveraged buyouts. By reducing corporate net worth, this restructuring of corporate balance sheets places greater risk on holders of corporate debt and increases the chances of default. Because of these factors, a rise in interest rates or a significant economic downturn may have repercussions in financial markets that are hard to predict or control.

Changes in the value of the dollar may also affect monetary policy. Some policymakers maintain that central banks should try to stabilize the dollar near its current level. According to this view, total dollar depreciation up to now may ultimately be sufficient to bring the U.S. trade deficit down to a sustainable level if it is accompanied by further reduction in the federal deficit. Moreover, a larger depreciation would be costly because it would exacerbate inflation and lead to inefficiencies in production.

Others argue that, even if the budget deficit is reduced, the dollar must fall much further to achieve desired reductions in the current account. According to this view, if central banks do not permit the dollar to fall when private investors are pessimistic, it would result in more rapid monetary growth abroad than is suitable to restrain inflation. Further depreciation of the dollar would foster growth in U.S. exports, which would help offset the slowdown in domestic demand that might otherwise result from reducing the budget deficit.

Monetary policy in 1989 will be affected by which view of the dollar the Federal Reserve and other central banks adopt. The large and growing external debt of the United States contributes to the risk of renewed pressure on the dollar. If rates of return on dollar assets do not rise sufficiently relative to other asset yields, or if U.S. policies are not perceived to be favorable to the long-run stability of the dollar, private international investors might become uneasy over the increasing proportion of dollar assets in their investment portfolios. This unease, in turn, could lead to severe downward pressure on the dollar, as well as to sharp swings in domestic financial markets. If the dollar came under pressure as a result of these or other factors and the Federal Reserve and other central banks attempted to stabilize it, domestic interest rates could rise to levels beyond those needed to control domestic economic growth. Similarly, if foreign central banks were to purchase dollars on a large scale in order to stabilize the dollar, then efforts by foreign governments to control inflation in their own countries could be hampered.

RECENT ECONOMIC DEVELOPMENTS

The U.S. economy is now close to making full use of its resources. If the economy continues to grow more rapidly than its productive capability, as it has in recent quarters, inflation is likely to accelerate. Evidence indicates that the rate of growth has slowed slightly in the last two quarters, but it still appears to exceed the rate needed to keep inflation from accelerating. In recent years, the proportion of demand accounted for by investment and net exports has steadily increased. This shift toward the components of demand that are most favorable for long-term growth is likely to continue this year, though at a lower rate, as the economy slows.

The Global Environment

Robust growth overseas last year strengthened foreign demand for U.S. goods, and foreign growth is also likely to be strong this year. This rapid economic growth and the growth of the money supply abroad in the first half of 1988, however, has caused concern about inflation in other countries. Because of this concern, foreign monetary authorities have been more restrictive in their policies, and as a result interest rates have risen abroad.

Economic Growth in Foreign Countries. Even though foreign real growth in the aggregate (weighted by shares in U.S. exports) is likely to be lower in 1989 than in 1988, the growth rate for subsequent years looks stronger than the average for the 1985-1987 period. This robust growth is a major positive factor in the outlook for U.S. net exports. Real growth in 1988 in most of the major foreign industrial countries far exceeded what almost all forecasters expected. In both Europe and Japan, expansionary monetary policies in 1987 and early 1988 spurred this recent growth, as well as the gains in real purchasing power that accompanied lower oil prices and the weakness of the dollar. Japanese and West German fiscal policy was also stimulative. In Europe, investment boomed, in part spurred by the expected realization of an integrated market in the European Community in 1992. Unemployment rates have been declining in Europe, and, although unemployment is still high, shortages of skilled labor have emerged. Real growth in some of these countries in 1989 and 1990 is expected to slow somewhat because of high rates of capacity utilization and rising interest rates. In the aggregate, the economies of foreign industrial countries that are important for U.S. exports grew by 4.1 percent in 1988, up from 3.5 percent in 1987. They are expected to grow by 2.7 percent in 1989.

The outlook for real growth in the developing countries and newly industrializing countries (NICs) that are important to U.S. exports is quite mixed. In the aggregate, their economics grew by about 3.4 percent in 1988, and will probably grow by about 3.8 percent in 1989.

Foreign Inflation. Inflation has recently accelerated in most major foreign industrial countries, and it is expected to continue to rise in 1989. Foreign inflation rates can have a significant impact on U.S. trade by affecting the competitiveness of U.S. goods even if the exchange rate does not change. It can also affect U.S. inflation through import prices, and it is, of course, a major factor in formulating foreign monetary policy. In the aggregate, inflation in the foreign industrial countries that are important to U.S. trade rose from approximately 2.4 percent in 1987 to 2.7 percent in 1988, and it is expected to rise to 3.6 percent in 1989.

Foreign Monetary Policy and Interest Rates. In many industrial countries, monetary policy was expansionary in 1987 and early 1988, partly because of the need to bolster the financial system in the wake of the worldwide stock market crash and partly because of intervention to support the dollar. Subsequently, monetary policy tightened to stem rapid inflation in some countries, as in the United Kingdom, or to reduce the possibility of future inflation, as in West Germany. Rapid growth in money supplies and strong domestic demand raised fears about the possibility of higher inflation in West Germany, even though the current inflation rate is quite low.

Monetary policies in the foreign industrial countries in recent months have been roughly similar to those in the United States. Interest rates in the major foreign industrial nations rose in the second and third quarters of 1988, and either remained high or continued increasing in the rest of the year. Moreover, they are expected to rise further in the first half of 1989.

The U.S. Economy at Potential

The trend rate of growth of the economy's productive capability is currently about 2 percent to 3 percent a year.[4] In the aftermath of a recession, the economy can easily grow more rapidly for an extended period, but growth in excess of the trend rate when the economy is already using its resources at a high level is likely to heighten inflationary pressures. In the last half of the 1960s, the economy grew more rapidly than the trend rate, even though it had already been operating at potential by 1964. This growth caused the underlying rate of inflation--that is, the Consumer Price Index (CPI) excluding food, energy, and used cars--to accelerate from about 1.3 percent in 1964 to 4.5 percent in 1969. A similar situation occurred in 1972 and 1973 (see Figure I-4).

Estimates of the potential rate of noninflationary growth are very imprecise. If labor participation rates or productivity increase faster than CBO currently anticipates, or if the response of wages and prices to capacity constraints is smaller than CBO assumes, the potential rate of noninflationary growth would be higher. Most estimates fall in

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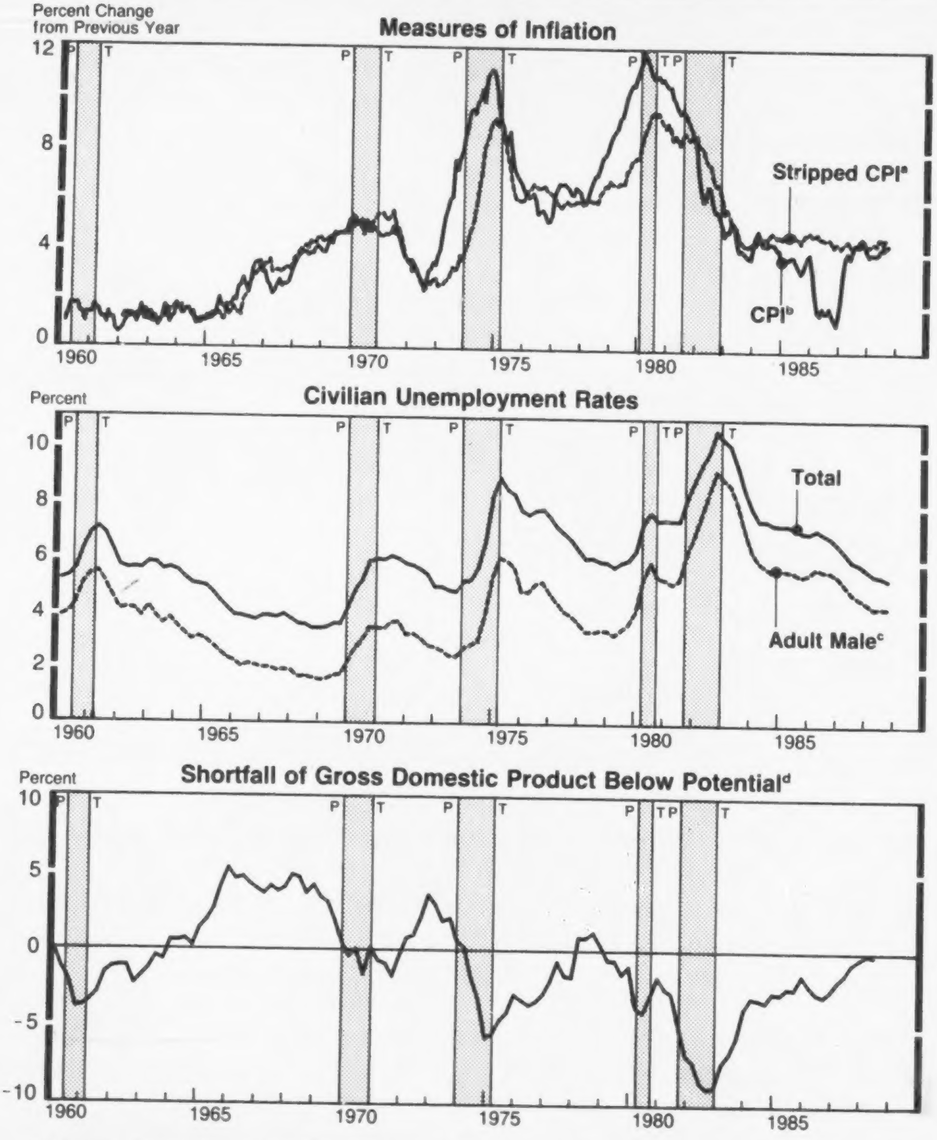
[4] For a description of the method for estimating potential output, see Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1988-1992* (January 1987), Appendix E.

Figure I-4. Inflation and Resource Utilization



Measures of Inflation

Civilian Unemployment Rates

Shortfall of Gross Domestic Product Below Potential[d]

SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics; Department of Commerce, Bureau of Economic Analysis.

[a] CPI-U excluding food, energy, and used cars.

[b] CPI-U from January 1983 to present; before that time the series incorporates a measure of homeownership conceptually similar to that of the current CPI-U.

[c] Men 25 to 54 years old.

[d] The shortfall is the difference between actual and potential real gross domestic product. The Congressional Budget Office's method of calculating potential GDP is described in Appendix B of *The Economic and Budget Outlook: An Update* (August 1987).

the range used by CBO, however, and developments in labor markets and prices support the notion that there are few underused resources.

Labor Markets and Wages. The tightening of the labor market is the major reason that the potential for further rapid, noninflationary growth is limited. The unemployment rate declined throughout 1987, and it continued to improve in 1988. Total compensation per hour has picked up substantially, and these increases--when combined with moderate gains in productivity--resulted in a mild increase in unit labor costs in 1988.

Employment grew rapidly from mid-1987 to the middle of last year, and growth eased only slightly in the last half of 1988. The unemployment rate fell sharply in the first half of 1988, as employment gains outstripped the growth in the labor force. In the second half of the year, however, growth in the labor force accelerated, and the unemployment rate stabilized at about 5.4 percent. Two commonly used measures of slack in labor markets indicated tighter conditions. The unemployment rate for "prime-age" males (ages 25-54) and the unemployment rate for married men fell to comparatively low levels in 1988, although they remained somewhat above levels reached at most postwar cyclical peaks.

Growth in labor productivity in the nonfarm business sector was about 1½ percent in 1988, about the same as the average annual rate of growth of productivity from the last business cycle peak to the third quarter of 1988. While this rate compares favorably with the 0.5 percent peak-to-peak annual rate of growth in the 1973-1980 business cycle, it is below both the 2.0 percent rate of the 1969-1973 cycle, and the 2.4 percent rate in the 1960-1969 cycle. If the economy slows this year, growth in productivity is also likely to weaken.

Labor compensation rates accelerated in the first three quarters of 1988. In September, the Employment Cost Index (ECI) for total compensation to workers in private industry was up 4.5 percent from its level 12 months previously, compared with a 3.3 percent increase in September of 1987 (see Figure I-5).

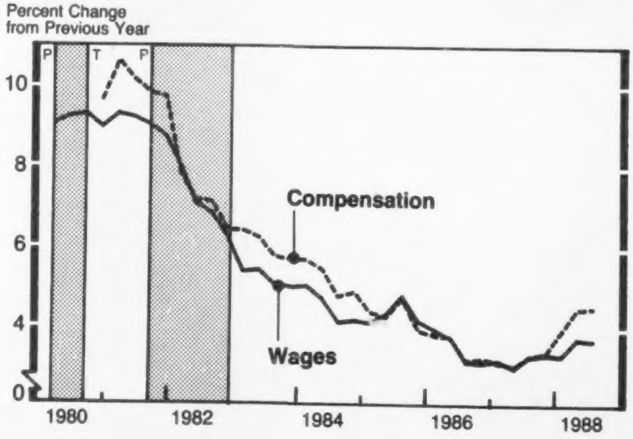
The wage and salary component of compensation has not risen as fast as total compensation, which includes benefits such as health insurance, employer contributions to pension plans, Social Security, and one-time bonuses. The tightness of the labor market may cause wages to rise more rapidly in the future, but employers have been cautious about increasing wages, resorting at times to one-time bonus payments to minimize the growth in their employees' base wages.

Total compensation has increased much more rapidly than wages and salaries. Several factors account for this rise: an increase in Social Security payroll taxes effective January 1988, a bulge in health insurance premiums, and the payment of employee bonuses in lieu of wage and salary increases. The growth in health insurance premiums seems likely to continue at least through 1989, and Social Security taxes will increase slightly in January 1990.

The growth of unit labor costs for nonfarm business has not changed much in the last four years, and given the growth in total compensation and the moderate gains in productivity, it has increased by about 3 percent in 1988. There is some evidence of faster growth in recent quarters, but so far these increases have been enough only to put moderate upward pressure on the underlying rate of inflation.

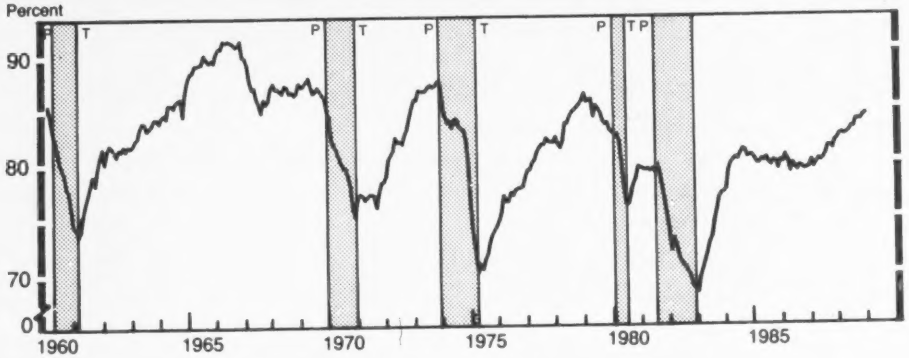
Prices. Although capacity utilization is high and other signs indicate that inflation will pick up in the near future, the underlying rate of inflation did not accelerate during 1988. The CPI, which grew by 3.7 percent in 1987, increased at a 4.8 percent rate in the second and third quarters of 1988, but this acceleration stemmed largely from tempo-

Figure I-5.
Employment Cost Index



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

Figure I-6. Manufacturing Capacity Utilization



SOURCES: Congressional Budget Office; Federal Reserve Board.

rary hikes in food costs. In the fourth quarter, CPI inflation was lower than in the middle of the year. The growth of the CPI excluding its most volatile components--energy, food, and used car prices--remained close to $4\frac{1}{2}$ percent, as it has for the past five years (see Figure I-4). The fixed-weight GNP deflator also accelerated at mid-year, but this increase occurred largely because of the rise in food prices and the changes in oil prices.[5]

Capacity constraints became more and more evident in 1987 and in the first half of 1988. But the addition of new capacity and the slight slowing of growth seem to have moderated pressures recently (see Figure I-6). Operating rates in manufacturing increased steadily throughout 1988, but not as fast in the second half of the year. The textile, paper, chemicals, and aerospace industries were operating at a high rate by the end of 1987, and they remained at those rates in 1988. Operating rates in some other industries--particularly primary metals, automobiles, and both electrical and nonelectrical machinery--increased rapidly during the first half of 1988, pulling the overall manufacturing rate close to the levels of previous peaks.

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5. The fixed-weight GNP price index is a general measure of the change in prices of goods and services produced in the United States. The implicit GNP deflator is affected by changes in the composition of production.

Oil prices fell sharply in the third quarter of 1988 as several members of the Organization of Petroleum Exporting Countries (OPEC) exceeded their quotas. Under the new production agreement reached in November, the overall OPEC quota was raised slightly, and all countries except Iran donated part of their quotas to Iraq. This arrangement allowed Iraq to achieve production parity with Iran (which was Iraq's chief objective), while maintaining Iran's share in the total OPEC quota.

The OPEC members displayed considerable unity in January 1989, when its members carried out the production accord. It is likely, however, that OPEC unity will be short-lived. Substantial unused capacity exists in a number of OPEC countries, and at least one member has shown dissatisfaction with its quota. In addition, individual countries have strong incentives to exceed their quotas, as they have often done in the past. Demand for petroleum traditionally falls in the spring, and this may test the OPEC agreement. Because production is likely to exceed the agreement, the CBO forecast for oil prices assumes that average oil prices in 1989 will not reach the target of $18 per barrel set by OPEC.

Grocery store prices rose at an annual rate of 8 percent between June and November of 1988. Prices of fruits and vegetables, which were the major source of food inflation, rose at an annual rate of 21 percent; cereal and bread prices also rose sharply. Meat prices, however, remained relatively constant. The drought raised feed costs, which increased the price of chickens, but made cattle and hog production less profitable. As a result, farmers increased their slaughter of cattle and hogs, thereby lowering prices.

A continued increase in aggregate food prices is likely this year. Many agricultural economists expect cattle herds, which are at their smallest numbers since 1961, to be rebuilt over the next few years. This will temporarily reduce the supply of cattle to feedlots and raise beef prices. Pork prices should also strengthen in the second half of this year, as hog producers begin to rebuild their breeding stock. Poultry prices, however, are expected to soften by the end of 1989, as current plans for expansion are carried out. Consumers, facing lower growth in their incomes, may also help to limit food inflation by reducing their demands for higher priced meats.

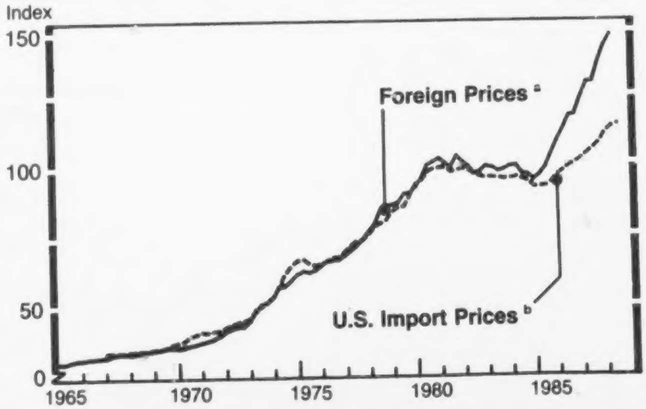
Nonpetroleum import prices have not increased as much in recent years as the depreciation of the dollar since early 1985 would imply. Foreign consumer prices, converted to U.S. dollars, have increased much more rapidly than the prices of imports to the United States (see Figure I-7). The relatively slow increase in import prices is the result of a number of factors: (1) the source of imports has shifted away from those countries whose currencies have rapidly appreciated against the dollar; (2) profit margins, which had been built up during the period of dollar appreciation, were cut as the dollar fell; and (3) foreign production costs for traded goods are probably not increasing as fast as foreign consumer prices in general.

Import prices grew modestly in late 1988, but they are likely to return to higher growth rates in the near future. The potential for further cost cutting and trimming of profit margins appears to be limited, and the recent economic growth in most of the countries that export to the United States will push up their export prices.

The Dollar and Foreign Trade

The value of the dollar moved down from early 1985 to early last year, and, though it fluctuated sharply during 1988, it was about 3 percent higher in December than it had been in January. Largely because of

Figure I-7.
Foreign Prices and U.S. Import Prices



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; International Monetary Fund.

a Foreign prices converted to U.S. dollars for 18 countries weighted by shares in U.S. nonpetroleum imports.

b Fixed-weight price index for nonpetroleum merchandise imports.

past depreciation of the dollar, the real trade deficit improved sharply between the fourth quarter of 1987 and the second quarter of 1988. As a result, the dollar strengthened in mid-1988. The rate of improvement in the deficit slowed markedly in the second half of 1988, however. Confidence in the dollar diminished sharply in the fourth quarter, and the dollar lost most of its midyear gains, even though interest-rate differentials and central bank intervention were then supporting the dollar. The outlook for the trade deficit in the next six months is for somewhat faster improvement.

There are strong reasons for assuming that the dollar will depreciate over the forecast and projection periods, though not as rapidly as it did in the 1985-1987 period. If the dollar does not depreciate further, the U.S. current account deficit will continue to grow, and private foreign investors will continue to accumulate net dollar claims against the United States at an unsustainably high rate. CBO assumes that private foreign investors will want to bring the growth rate of their net dollar claims down to a rate nearer to that of the growth of aggregate foreign wealth. Private demand for dollar assets is therefore expected to subside sufficiently to yield a long-term rate of depreciation against major foreign currencies that will slowly bring down the U.S. current account deficit.

The Trade and Current Account Deficits. The real trade deficit improved rapidly in the first half of 1988, but the rate of improvement slowed dramatically in the second half of the year. The deficit actually deteriorated in the third quarter. Between the fourth quarter of 1987 and the fourth quarter of 1988, however, the real trade deficit improved by over $35 billion. Both the nominal trade balance and the current account balance also improved sharply in 1988 on an annual basis, but net external debt nonetheless rose from $368 billion at the end of 1987 to about $486 billion by the end of 1988.

The slow growth in real net exports in the second half of 1988 reflected a slowing in the growth of exports of nearly all types. Real export growth of nonagricultural merchandise in the second half of 1988 was at about half the rate of the previous year. Similarly, real exports of services such as tourism slowed substantially in the second half of 1988.

Imports grew sharply in the second half of 1988, again virtually across the board. Oil prices fell throughout 1988, and real oil imports rose sharply in the second and third quarters. Both real imports of non-oil merchandise and real imports of services such as tourism declined in the second quarter, but then bounced back sharply in the third quarter. Part of this pickup in the third quarter was the result of a significant decline in the rate of inflation in import prices as the dollar appreciated.

On an annual basis, net flows of investment income deteriorated in 1988, and this decline is expected to continue as the U.S. net external debt continues to grow. Net flows of investment income increased in the second half of 1988, but this improvement was probably temporary, the result of cyclical factors abroad.

Domestic Demand

The growth of real domestic demand has slowed recently, and the outlook is for further slowing. A number of major categories of domestic demand--residential construction, business structures, and government purchases of goods and services--are likely to grow slowly or decline in 1989, while investment in equipment could be strong. The growth of expenditures for personal consumption is also expected to be low. But a better-than-expected demand for U.S. exports (which could push up growth in personal income) or a willingness of households to save less could result in a more rapid growth in consumption.

Personal Income and Consumption. The growth of real disposable income accelerated in mid-1987 and has remained high, primarily because of the rapid increase in employment and hours worked during the last year and a half. Even though real hourly wages were falling, the gains in employment gave a boost to total real wage and salary income. The strength of the total growth in wage and salary income offset both the increase in Social Security tax rates in January 1988 and the mild increase in the growth of the personal consumption deflator.

Real growth in consumption began to slow in 1986 from the 5 percent pace of the 1983-1985 period, and the rate continued to fall through early 1988. Growth in consumption bounced back to a 3.5 percent rate in the last half of 1988, apparently driven by the rapid growth of disposable income. The personal saving rate fell from 5.9 percent in early 1983 to an average of 3.2 percent in 1987. The slowdown in consumption and the pickup in income growth in 1987 and 1988 resulted in a mild improvement in the saving rate. It has been in the 3.7 percent to 4.4 percent range in recent quarters.

The growth of real disposable income is expected to slow in 1989 with the general slowdown in the economy. It should be further moderated by the worsening in U.S. terms of trade, as prices of imported goods grow more rapidly than the prices of domestically produced goods. The growth in consumption is likely to ease as real growth in disposable income slows.

Residential Construction. Real investment in residential construction has fallen since its peak in 1986. Almost all of the major categories of residential investment are currently lower than they were in that year, but the bulk of the decline has been the result of weakness in the construction of multifamily dwellings. Real residential investment fell about 2 percent in 1988, but it appears likely to recover slightly in 1989 in spite of further weakness in housing starts.

Single-family housing starts fell from 1986 through mid-1988, and they are unlikely to recover this year. The rates on fixed-rate mortgages eased early in 1988, but have risen since then. Moreover, adjustable rates, after falling in late 1987 and early 1988, are now the highest they have been in two years. Real investment in single-family housing in the national income and product accounts (NIPA) has been stronger than the data on housing starts imply, in part because of a trend toward larger homes (see Figure I-8). A continuation of that trend will keep real investment in single-family housing close to 1988 levels, even though starts will be weak.

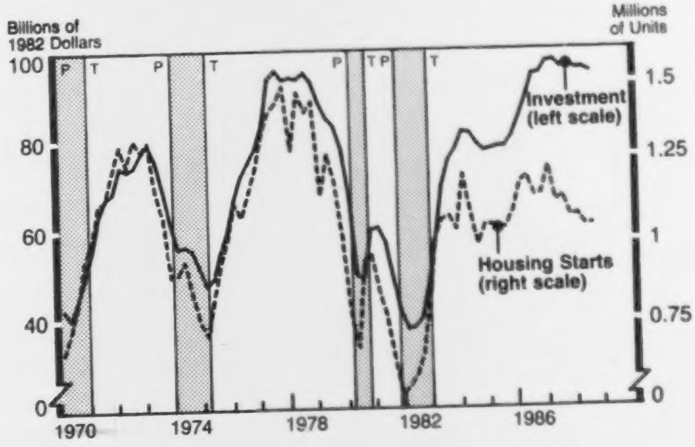
Multifamily housing starts fell rapidly in 1986 and 1987, and have now stabilized at a low level. Growth in construction for multifamily housing in the 1983-1985 period, spurred by favorable tax provisions, outstripped the demand for rental units, and vacancy rates rose dramatically. The high vacancy rates and the less favorable treatment of housing in the 1986 tax law depressed construction. Though multifamily starts have been at a low level for more than a year, the vacancy rate has fallen only marginally. It is unlikely, therefore, that real investment in construction for multifamily housing will resume growing before the end of 1989.

Business Fixed Investment. Business fixed investment was a major source of growth in final demand last year, as robust growth in spending on equipment more than made up for the weakness in spending for structures. In response to increases in operating rates and a large backlog of unfilled orders, real business fixed investment grew by about 10 percent in 1988. Markedly slower growth is likely for the forecast period, however, since pressure on capacity seems to be easing and final sales are slowing.

Investment in real durable equipment by producers increased about 14 percent in 1988, the result of continued pressures on capacity utilization. If real GNP growth slows in 1989, capacity rates will probably remain at current levels, and investment in equipment will then slow, though it is likely to continue to outpace the growth of GNP.

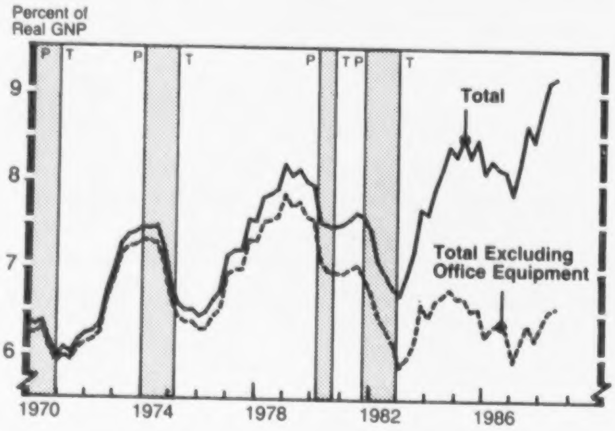
As measured in the NIPA, investment in computers has dominated real equipment investment during this recovery, particularly in 1988. Noncomputer investment, however, also showed strong gains in the last two years (see Figure I-9). Because computer prices, adjusted for improvements in quality, have fallen so much since the 1982 NIPA price index base year, the large nominal increase in expenditures on

Figure I-8. Single-Family Housing



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of the Census and Bureau of Economic Analysis.

Figure I-9. Real Expenditures on Producers Durable Equipment



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

computers in 1988 resulted in a huge increase in real terms.[6] However, even if one excludes the category of office equipment (which largely consists of computers), investment increased by 10 percent in 1988.

Real investment in business structures, in contrast to that in equipment, has been weak, and this weakness is likely to continue into 1989. Commercial construction, particularly office buildings, boomed from late 1983 through 1985, in part to make up for the falloff of construction in the 1981-1982 recession, but also in response to favorable changes in tax laws in the early 1980s. The favorable provisions were weakened in 1986, and this change, combined with the overbuilding of the previous years, has caused a long decline in office construction. In addition, oil drilling has been hurt by the recent weakness in petroleum prices, and the financial and regulatory problems of the electric utility industry have depressed construction in that sector.

The most recent Commerce Department survey of business investment plans for plant and equipment indicates 6 percent nominal and 5.9 percent real growth this year. Nominal spending by manufacturers is expected to slow from an estimated 12.8 percent in 1988 to 4.3 percent in 1989, whereas nonmanufacturing industries (which account for 60 percent of plant and equipment spending) anticipate only a slight slowing from the 9.0 percent pace of last year. With the exception of motor vehicles and paper, all major manufacturing industries are planning to reduce their rate of investment sharply. Nonmanufacturing investment continues to grow largely because of rapid growth in the air transportation sector along with only moderate reductions in the rate of growth of investment in the commercial sector.

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[6] For a discussion of this issue, see Congressional Budget Office, *The Economic and Budget Outlook: An Update* (August 1988), Appendix A.

Government. Real government purchases of goods and services, excluding the activities of the Commodity Credit Corporation (CCC), grew slowly in 1988. Total government purchases are expected to show little increase during the forecast period, thus contributing to slower overall economic growth.

Real federal purchases, excluding the CCC, have grown only moderately as small decreases in defense purchases were offset by growth in nondefense purchases. This pattern is expected to continue during the forecast period.

Growth of real *state and local purchases* was strong from 1983 to 1986, driven primarily by spending on construction. Construction slowed sharply in 1987, however, and changed little last year. With further weakness expected in construction spending, purchases by states and localities during the forecast period will probably grow more slowly than in the last two years.

State and local budgets (excluding social insurance receipts and expenditures) showed a large deficit of $13.3 billion in the third quarter of 1988, the fifth consecutive quarter of deficits in excess of $10 billion. The deficit amounted to 2.2 percent of "own-source" revenue (that is, revenue that excludes grants from the federal government to states). This is a large percentage for the post-1971 period, but much smaller than the 5.5 percent average of the 1958-1971 era. Despite some reduction in spending for construction, as well as expected tax increases, the nonsocial insurance deficit is not expected to be eliminated any time during the forecast period. Overall, however, this sector will continue to be a net lender because of large surpluses in the social insurance accounts.

FORECASTS AND PROJECTIONS

The Congressional Budget Office's economic projection has two parts: a short-term forecast of economic conditions through 1990, which is contingent on specific policy assumptions; and a medium-term projection through 1994 based on historical trends and other assumptions about economic growth.

The Short-Run Forecast

The short-term forecast shows moderate growth through the end of 1990, as the economy continues to operate close to its potential (see Table I-2 and Figure I-10).[7] The forecast assumes that the Federal Reserve's policy of moderate monetary tightening, followed for the past half year, will limit real growth of domestic demand to rates that will avoid a sharp increase in inflation. Unemployment remains close to current rates. The deficit reduction targets of the Reaffirmation Act entail a tightening of fiscal policy in 1990. This tightening is expected to release resources that have heretofore been used to satisfy domestic demand for the production of exportable or import-competing goods. It should also help reduce interest rates (particularly short-term rates) from their current levels.

Inflation. Because of increases in food prices and higher import prices, consumer prices are expected to increase somewhat faster in 1989 than in 1988. Low oil prices, which helped hold down inflation in the last few months of 1988, are expected to rise in 1989 as a result of the OPEC agreement in December 1988. The small acceleration in consumer prices in 1989 is thus mostly the result of external or temporary factors rather than an increase in core inflation. The fixed-weight GNP deflator, which reflects increases in domestic prices, is likely to rise about as much during 1989 as it did during 1988.

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[7] The forecast was based on data available in early December 1988. Information released since that time indicates stronger growth in the fourth quarter of 1988, but this change does not have a significant impact on either the macroeconomic outlook or the forecast for the budget deficit.

Because wage growth is likely to substitute for the special factors pushing up inflation in 1989, inflation does not subside much in 1990. At current unemployment rates, wages are likely to grow about as fast as consumer prices in 1989 and a little faster in 1990. This rate represents a turnaround in real wage growth, which was negative in the last two years (see Figure I-11). As a result, the fixed-weight GNP deflator is forecast to increase about 4¾ percent during 1990, up one-half of a percentage point from its 1989 rate.

Interest Rates. Short-term interest rates rose substantially in the last quarter of 1988. As discussed earlier, this rise reflected a number of factors, but in part was influenced by the momentum of nonfarm economic growth in the last half of 1988, which did not seem to be slowing as promptly as the Federal Reserve desired. The sharp decline of the dollar that occurred at the same time established the conditions for an improvement in the real trade balance. If improvement is not offset by

TABLE I-2. THE CBO FORECAST FOR 1989 AND 1990

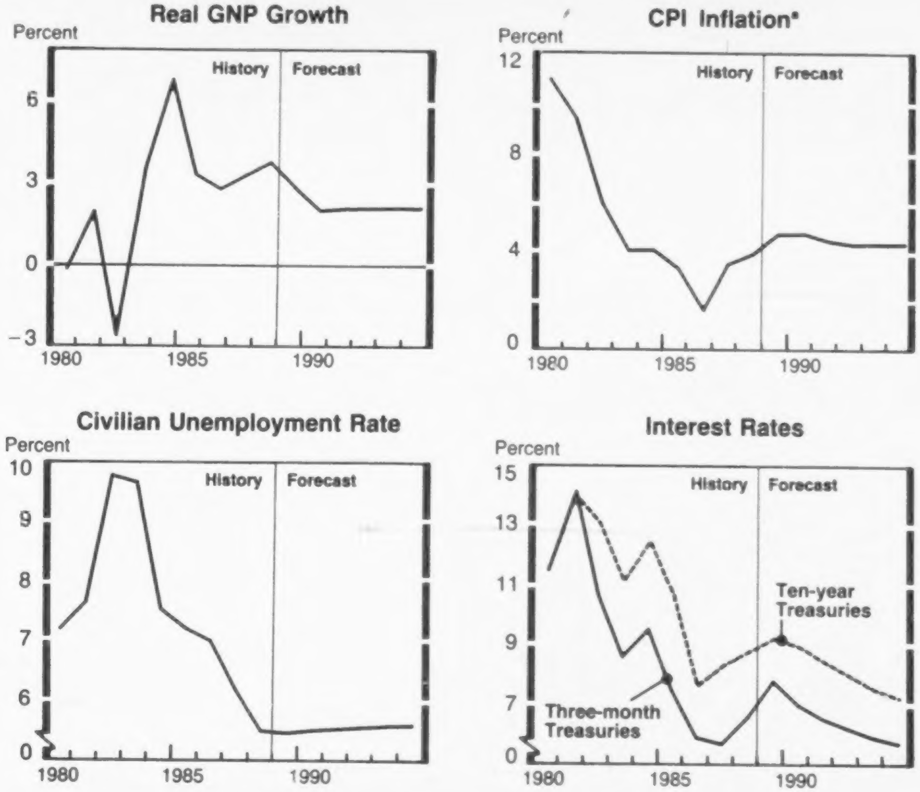
	Actual	Estimated	Forecast	
	1987	1988	1989	1990
Fourth Quarter to Fourth Quarter (Percent change)				
Nominal GNP	8.3	6.7	6.9	6.6
Real GNP	5.0	2.6	2.9	2.2
Implicit GNP Deflator	3.1	4.0	3.9	4.4
Fixed-Weight GNP Price Index	4.0	4.4	4.3	4.7
CPI-W[a]	4.6	4.3	5.0	4.8
Calendar-Year Averages (Percent)				
Unemployment Rate	6.2	5.5	5.5	5.5
Three-Month Treasury Bill Rate	5.8	6.7	7.9	7.1
Ten-Year Government Bond Rate	8.4	8.9	9.3	9.0

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Department of Labor, Bureau of Labor Statistics; Federal Reserve Board.

a. Consumer Price Index for urban wage earners and clerical workers.

a slower growth in expenditures in other sectors, however, it threatens to boost GNP growth to a rate that the Federal Reserve considers to be inflationary. At the same time, solid foreign growth and efforts to reduce the growth of the money supply overseas are raising foreign interest rates. In the first half of 1989, therefore, short-term interest rates seem likely to remain high (a little above 8 percent for the Treasury bill rate).

Figure I-10. The Economic Forecast and Projections



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Federal Reserve Board.

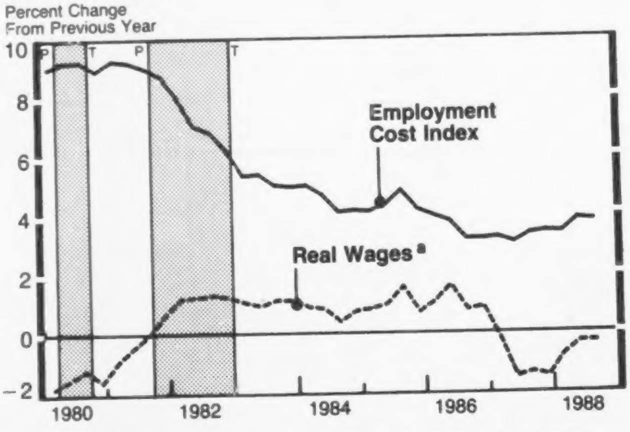
* CPI-U from January 1983 to present; before that time the series incorporates a measure of homeownership conceptually similar to that of the current CPI-U.

Rates will decline somewhat after mid-1989, reflecting both the success of the Federal Reserve's policy of slowing overall domestic demand growth, and the passage of legislation to bring the federal deficit to the targets of the Reaffirmation Act.

The Composition of Demand. Real net exports and business fixed investment are expected to be the major sources of economic expansion in the next two years (see Figure I-12). Excluding net income on foreign investment, real net exports improved by about $44 billion between the fourth quarter of 1987 and the fourth quarter of 1988, in large part because of the previous fall in the dollar. As a result of the temporary strength of the dollar in mid-1988, the rate of growth of net exports is likely to slow to about $20 billion during 1989 and 1990. Business fixed investment is also expected to contribute to growth, although not--as in the first half of 1988--through an extraordinary increase in real spending on computers, but rather through a broad advance in purchases of equipment. Investment in industrial structures is likely to remain weak.

Although CBO projects that real net exports will improve substantially in the next two years, the current-account deficit is not

Figure I-11.
Private Nonfarm Wages



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics; Department of Commerce, Bureau of Economic Analysis.

a The employment cost index for private wages and salaries divided by the personal consumption deflator.

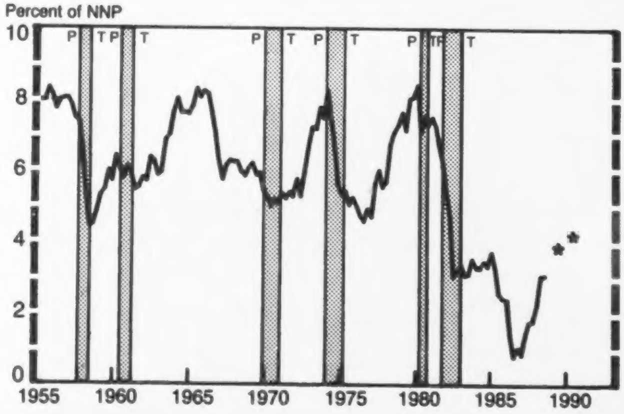
likely to be much lower in the near future. Two main factors account for this lack of progress:

- Because import prices are expected to increase quite sharply in 1989, the improvement in real net exports will not be matched by a corresponding improvement in nominal net exports.

- In addition to trade in goods and services, the current account balance reflects receipts and payments of interest and profits. The balance on these items is expected to continue to deteriorate by about $10 billion in both 1989 and 1990, reflecting the increasing net debt of the United States to foreigners. Not all of these flows are reflected in the national income accounts, but those that are will reduce real GNP growth by about 0.1 percent in 1989 and 1990.

Real consumer spending accounted for a large share of growth in the period since 1982 and rose about 3½ percent in 1988. But it is likely to be constrained in 1989 and 1990 by the much slower growth of real disposable income--1½ percent or less. In 1989, growth of real income will slow as a result of the higher forecast for import prices, as well as the slowing of the economy. In 1990, however, the fiscal

Figure I-12. The Share of Investment and Net Exports in Output



NOTE: The asterisks indicate values forecast by CBO.

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

NOTE: Net fixed investment plus net exports as a percent of net national product, are all in 1982 dollars.

changes necessary to reach the Reaffirmation Act target will begin to play a role.

The Drought. Last summer's drought affected the economy in a number of ways during 1988, and the repercussions affect the forecast for 1989. The drop in agricultural production reduced real 1988 GNP growth by about 0.3 percentage point, and inflation of food prices was exacerbated by about one-half of a percentage point during 1988. Moreover, because prices of agricultural exports were higher, the current account balance improved temporarily. The forecast for 1989 reflects an unusually large swing in the growth of real GNP that is likely to be reported between the fourth quarter of 1988 and the first quarter of 1989, assuming a return to normal weather and an increase in acreage planted in 1989. The drought will depress the fourth-quarter growth rate by more than a percentage point, and then, because a return to normal weather is assumed, that assumption will remove the effect of the drought that had cumulatively depressed the last three quarters of 1988 by about $26 billion (in constant 1982 dollars). This change will increase GNP growth in the first quarter of 1989 by about 2.5 percentage points more than it would have been if the drought had not occurred. The forecast of real GNP growth for all of 1989 is thus 0.3 percentage point higher than it otherwise would have been.

Medium-Term Projections

The medium-term projections for 1991 to 1994 do not attempt to capture possible short-term fluctuations in the economy, because it is not reasonable to expect to be able to predict such fluctuations more than two years ahead. Instead, they are produced using a simple method that relies primarily on projected growth in the labor force and in productivity. In addition, the projection method assumes that on average, levels of employment and output in the mid-1990s will reflect an economy operating at about average rates of unemployment and capacity utilization. Since these historical averages include both recessions and boom periods, the projections are consistent with the average frequency of recessions in the past. CBO projects that the annual rate of growth of real GDP between 1990 and 1994 will average 2.3 percent. GNP is projected to grow slightly more slowly, at 2.2 percent, reflecting a reduced net flow of investment income from abroad. The GDP and GNP growth rates are slightly below the rate of potential growth, because CBO's projection method assumes in effect that a period of slow growth will occur sometime during the projection period.[8] The civilian unemployment rate is projected to remain close to current levels (see Tables I-3 and I-4). Because CBO's current estimate of potential GDP reflects both newer data and technical revisions, its medium-term projections of output differ slightly from those made in August.

Although the discrepancy between GNP and GDP growth rates appears small, it reflects the massive increase in recent years of net debt owed to foreigners. Real net exports are projected to improve substantially, but the current account remains in deficit throughout the projection period. Consequently, the net external debt and the servicing of that debt continue to grow. This increase slows the rate of improvement in GNP relative to GDP by reducing the share of domestic income accruing to U.S. residents.

The growth of the implicit GNP deflator remains constant at 4.1 percent throughout the projection period, close to the average rate experienced since World War II. Inflation--measured by either the CPI or the fixed-weight price index--is higher at 4.4 percent. The discrepancy between the growth of the GNP deflator and the measures of price change reflects a projected decline in both the absolute and relative price of computers, as well as an increase in the relative importance of computers in investment, exports, and imports. These factors cause the implicit GNP deflator to grow less rapidly than better measures of inflation.[9]

Interest rates decline throughout the projection period. The nominal short-term interest rate falls to 5.9 percent in 1994--a level consistent with the average of real short-term rates since exchange rates began to float in 1973. Similarly, the long-term interest rate declines until the difference between the long and short rates is similar to the average spread between those rates during the 1973-1988 period.

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[8] For a description of CBO's method of projecting output, see Congressional Budget Office, *The Economic and Budget Outlook: An Update* (August 1987), Appendix B.

[9] For a discussion of this last issue, see Congressional Budget Office, *The Economic and Budget Outlook: An Update* (August 1988), Appendix A.

Most analysts believe that the large federal deficit, coupled with low private saving, increases interest rates. Because the rules used to project interest rates simply reflect historical averages, CBO did not force the levels of interest rates in the projection period to be consis-

TABLE I-3. MEDIUM-TERM ECONOMIC PROJECTIONS FOR CALENDAR YEARS 1991 THROUGH 1994

	Estimated	Forecast		Projected			
	1988	1989	1990	1991	1992	1993	1994
Nominal GNP (Billions of dollars)	4,859	5,209	5,542	5,902	6,281	6,685	7,117
Nominal GNP (Percent change)	7.3	7.2	6.4	6.5	6.4	6.4	6.5
Real GNP (Percent change)	3.8	2.9	2.1	2.2	2.2	2.3	2.3
Implicit GNP Deflator (Percent change)	3.4	4.2	4.2	4.2	4.1	4.1	4.1
Fixed-Weight GNP Price Index (Percent change)	4.1	4.4	4.6	4.5	4.4	4.3	4.3
CPI-W (Percent change)	4.0	4.9	4.9	4.6	4.4	4.4	4.4
Unemployment Rate (Percent)	5.5	5.5	5.5	5.5	5.6	5.6	5.6
Three-Month Treasury Bill Rate (Percent)	6.7	7.9	7.1	6.7	6.4	6.1	5.9
Ten-Year Government Bond Rate (Percent)	8.9	9.3	9.0	8.6	8.1	7.7	7.4
Tax Bases (Percent of GNP)							
Corporate profits	6.6	6.3	6.1	6.1	6.1	6.0	6.0
Other taxable income	21.0	21.2	21.2	21.0	20.8	20.6	20.5
Wage and salary disbursement	50.1	50.2	50.3	50.3	50.4	50.4	50.4
Total	77.6	77.7	77.6	77.4	77.3	77.0	76.9

SOURCE: Congressional Budget Office.

tent with any given deficit path. But if the federal deficit is not reduced below the baseline path discussed in the next chapter, interest rates could be somewhat higher than the historical average. On the other hand, substantial progress toward reducing the federal deficit could mean somewhat lower interest rates.

TABLE I-4. MEDIUM-TERM ECONOMIC PROJECTIONS FOR FISCAL YEARS 1991 THROUGH 1994

	Actual	Forecast		Projected			
	1988	1989	1990	1991	1992	1993	1994
Nominal GNP (Billions of dollars)	4,780	5,122	5,454	5,812	6,184	6,581	7,006
Nominal GNP (Percent change)	7.7	7.2	6.5	6.6	6.4	6.4	6.5
Real GNP (Percent change)	4.4	2.9	2.3	2.2	2.2	2.3	2.3
Implicit GNP Deflator (Percent change)	3.1	4.2	4.1	4.3	4.1	4.1	4.1
Fixed-Weight GNP Price Index (Percent change)	4.0	4.4	4.5	4.6	4.4	4.3	4.3
CPI-W (Percent change)	4.1	4.7	4.9	4.6	4.4	4.4	4.4
Unemployment Rate (Percent)	5.6	5.4	5.5	5.5	5.6	5.6	5.6
Three-Month Treasury Bill Rate (Percent)	6.2	7.9	7.2	6.8	6.4	6.2	5.9
Ten-Year Government Bond Rate (Percent)	8.9	9.2	9.1	8.7	8.2	7.8	7.4
Tax Bases (Percent of GNP)							
Corporate profits	6.7	6.3	6.2	6.1	6.1	6.0	6.0
Other taxable income	21.0	21.2	21.2	21.1	20.9	20.7	20.5
Wage and salary disbursements	50.0	50.2	50.3	50.3	50.4	50.4	50.5
Total	77.6	77.7	77.6	77.5	77.3	77.1	76.9

SOURCE: Congressional Budget Office.

Taxable Income

The growth of total wages and salaries is expected to drop slightly in 1989 from its 1988 pace, as the forecasted slower growth in employment offsets a mild acceleration in wage rates. Total wages and salaries increase faster than nominal GNP in the projection period, however, so that the share of GNP going to wages increases slowly through 1994 (see Table I-3).

The share of profits in GNP has declined over the entire postwar period, in part reflecting increases in corporate debt. (This increase includes the recent leveraged buyouts that substitute debt for equity, and thus replace reported profits by interest payments.) Increases in fringe benefits and depreciation have also reduced reported profits. Similarly, the increasing wage share of GNP will reduce the profit share. These factors are expected to overshadow improved profits in exporting and import-competing businesses that would otherwise be made possible by a declining dollar. Consequently, profits fall relative to GNP, particularly in 1989 and 1990.

Higher corporate interest payments help to increase personal interest income, which is a major component of other taxable income in Table I-3. In 1989, federal interest payments also increase relative to GNP, further increasing the GNP share of other taxable income. After 1991, however, federal net interest payments begin to fall relative to GNP, both because of the projected decline in interest rates and because federal debt begins to decline relative to GNP.

The share of total taxable income in GNP falls in each year after 1989 (see Table I-3). This decline is the result of the pattern of the federal government's net interest payments, and of interest payments by consumers to business. These two items are a part of taxable income, but are not part of national income. Thus, with interest rates declining in the medium term, taxable income should fall relative to GNP.

Uncertainty in the Forecast and Projections

The short-run economic forecast represents only one of many possible paths the economy might take over the next two years. In CBO's judgment, the forecast lies roughly in the middle of an array of possible paths: the economy's actual growth path over the next two years may be lower or higher than the forecast.

Most economic forecasters agree that the key uncertainty in the forecast for the near term is the Federal Reserve's effort to keep domestic inflation under control. Even under the best of circumstances, the ability of monetary policy to slow the economy gradually is uncertain. Slower growth in monetary aggregates and rising interest rates may not affect real growth significantly until they reach a point that triggers a sharp downturn in economic activity. The economy may, therefore, continue to grow rapidly in spite of monetary tightening, thus provoking higher inflation, further tightening, a rapid increase in interest rates, and eventually a recession. Although the CBO forecast indicates gradual slowing in the U.S. growth rate through 1989, a number of private forecasters expect a "hard landing" alternative.

The Federal Reserve Board's task of slowing the economy gradually is complicated by the volatility of the dollar in foreign exchange markets, the condition of a number of banking institutions, the problems with the debt in developing countries, and the relatively high degree of leveraging of nonfinancial institutions. Efforts to stabilize the dollar may result in higher interest rates than are desired if the economy is to slow gradually, and banking institutions and financial markets may now be particularly sensitive to high interest rates. Large-scale and persistent intervention in support of the dollar may also tend to push up inflation worldwide, as it did in the early 1970s.

Other forecasts (for example, those incorporated in the President's budget) have a considerably more optimistic outlook for inflation and growth. These forecasts assume that noninflationary potential GDP growth is greater than that estimated by CBO. Although the potential GDP estimates used by CBO are close to the majority of estimates, the more optimistic outlook could prove right if faster growth of the labor force, growth of productivity, or a slower wage and price response to capacity constraints result in a higher potential growth rate. If so, continued strong growth may not be quickly followed by higher inflation, and the Federal Reserve may not feel it necessary to tighten policy further.

These alternative views of possible developments in the next two years give an idea of the range of possible outcomes. Neither one can be completely ruled out. The CBO forecast, however, gives weight to both of these views and chooses what appears to be a prudent middle course; it assumes on the one hand, that no exceptional increases in productivity will take place and, on the other hand, it assumes that recession will be avoided, at least through the end of 1990.

CHAPTER II

THE BUDGET OUTLOOK

The federal government is expected to run a deficit of about $155 billion in fiscal year 1989, hardly different from the two previous years. Since 1987, deficits of $150 billion to $155 billion a year have marked a welcome turnaround from mid-decade, when they peaked at well over $200 billion. Under current taxing and spending policies, the deficit is projected to decline gradually--to about $141 billion in fiscal year 1990 and $122 billion by 1994. The deficit shrinks faster as a share of gross national product (GNP), from about 3 percent at present to 1.7 percent by 1994--still far above typical levels of the 1950s and 1960s, but close to average levels of the 1970s. With the nation in the midst of a sustained economic expansion, such deficits are clearly structural.

The baseline deficit does not decline swiftly enough to meet the targets set by the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987. The Reaffirmation Act sets deficit targets that culminate in a balanced budget by fiscal year 1993. Under current policies, the deficit would far exceed these targets, by amounts growing from $41 billion in 1990 to $129 billion in 1993 (see Summary Figure).

The Congressional Budget Office (CBO) last published its deficit projections in August. On balance, several factors have slightly worsened the deficit outlook since then. Technical factors--dominated by additional spending on troubled savings and loans--have contributed the most to the deteriorated deficit outlook. Economic growth and inflation have slightly exceeded projections, and are expected to continue generating additional revenues, but the sharp climb in interest rates since late summer has added to the government's cost of financing its debt and has largely offset the revenue gains. The Congress returned in September to complete action on numerous pieces of fiscal legislation; in total, though, Congressional action had little effect on the deficit.

This chapter summarizes the outlook for the federal budget under current policies. The revenue and spending projections described here are consistent with the economic forecast and assumptions outlined in Chapter I. First comes a short section explaining the baseline concept. The discussion then turns to the latest five-year projections. With the 1990 budget currently the focus of policymakers' attention, a special section outlines how the Reaffirmation Act will shape action on the 1990 budget in coming months. The importance of economic assumptions is illustrated by rules of thumb that summarize the budget's sensitivity to key economic variables. More detailed analyses of trends in federal spending and revenues follow, and the chapter concludes with a brief look at federal government credit activities.

THE BASELINE CONCEPT

Baseline budget projections show the likely course of federal revenues and spending if policies remain unchanged. Except in the very short run, the baseline is not a prediction of budget outcomes, because many changes in budget policies are bound to occur. But the baseline illustrates the consequences of current policies, and serves as a benchmark for measuring the budgetary effects of proposed changes in tax and spending laws.

Baseline Assumptions

The baseline projections follow well-known rules. The revenue projections incorporate current tax laws, including any increases or phaseouts contained in current law. (The sole exception is certain excise taxes dedicated to trust funds, which are assumed to be continued beyond their currently scheduled expirations.) Similarly, the baseline reflects the likely path, under current laws, of spending for entitlements such as Social Security and Medicare.

For many other programs, the Congress sets new funding levels each year in appropriation acts. The baseline assumes no real growth in these so-called discretionary programs, adjusting them only to keep pace with inflation of about 4 percent a year. Projections of offsetting receipts (such as receipts from Medicare premiums and oil leases) are consistent with current laws and policies, and net interest outlays are determined by the baseline deficits and the assumed interest rates. Appendix B further describes the baseline assumptions.

The Reaffirmation Act, in defining the starting point for possible across-the-board cutbacks, closely tracked the methods long used by CBO in its baseline projections. The baseline projections follow the act's specifications, with only a few exceptions. (These narrow exceptions, none of which affects projections for fiscal years 1989 and 1990, are listed in Appendix B.)

What the Baseline Is Not

For many years, CBO and the Administration published baseline projections that embodied contrasting interpretations of current policies. For example, some estimates included extra funding in some appropriated accounts to reflect expensive projects planned by agencies, most notably a continued buildup in defense. The result was a proliferation of baselines.

The Reaffirmation Act addressed this confusion, resolving many areas of disagreement and setting uniform rules for projecting all discretionary accounts. CBO follows these rules. As a consequence, the baseline does not contain enough funds for some projects that are now in their early stages. For example, conducting the 1990 census, fixing antiquated nuclear plants, constructing a manned space station or a superconducting super collider, or extending expiring subsidized housing contracts would all require increases above inflation. None of these projects is fully incorporated in the baseline; funding them would require increasing appropriations or diverting funds from other programs, as discussed in Appendix B.

One area of ambiguity in baseline projections concerns farm price supports. The most recent legislation governing these supports, a major entitlement program, will expire following the 1990 crop programs. The baseline extends the current program through 1994, an assumption also mandated by the Reaffirmation Act. Less clear, however, is what form the assumed extension should take. The Food Security Act of 1985 (the law currently governing farm price supports) contained declining loan rates and target prices through the 1990 crop year, in an effort to curtail excess production and huge government costs. The baseline assumes that target prices continue to decline after the 1990 crop year, an assumption that CBO has used ever since the 1985 act. An alternate assumption would be to hold target prices constant at levels specified for the 1990 crop year; this assumption would raise outlays in 1991 through 1994--by $0.5 billion in 1991 and by $3.6 billion in 1994.

THE FIVE-YEAR BUDGET OUTLOOK UNDER CURRENT POLICIES

Under these baseline assumptions, and the economic assumptions discussed in Chapter I, the federal deficit is projected to shrink slowly through 1994. The deficit's gradual decline is a direct result of the baseline methodology, which provides for no real growth in defense and nondefense discretionary appropriations. As Table II-1 shows, the deficit is expected to be $155 billion this year, $141 billion in 1990, and $122 billion in 1994. As a share of GNP, the deficit shrinks by almost half--from 3 percent at present to 1.7 percent by 1994.

In 1988, the deficit was $155 billion, up slightly from the previous year and very close to the level projected by CBO throughout the year. The final months of 1988 held some sobering developments on the fiscal front. Spending for deposit insurance--primarily to close or sell foundering savings and loans--surged, and interest rates climbed sharply. These developments foreshadowed the latest revisions to the budget estimates.

Changes in the Budget Estimates Since August

The deficit outlook has worsened slightly since CBO's last published report in August. The new projections of the deficit are higher by $5 billion to $10 billion in most years than last summer's estimates. Neither recently enacted legislation nor changes in the economic outlook, on balance, has contributed greatly to the deterioration. Other, technical factors are primarily responsible. Table II-2 summarizes the changes in the budget projections since last August.

Legislation Enacted Since August. In September and October, the Congress wrapped up a heavy calendar of fiscal legislation. The Congress completed all 13 regular appropriation bills by the start of the fiscal year on October 1, forestalling the need for short-term or omnibus bills. As a result of final appropriation action, defense spending will be $1.7 billion below previous projections in 1989, and the savings climb to an estimated $8.9 billion in 1994 if, as the baseline assumes, real 1989 funding levels are maintained. Appropriation bills for nondefense programs, however, added to spending--only negligibly in 1989 but by about $2 billion a year thereafter.

Other significant legislation enacted in the final weeks of the 100th Congress included the tax technical corrections bill, welfare reform legislation, a trade bill, and an anti-drug initiative. Several of

TABLE II-1. CBO BASELINE REVENUES, OUTLAYS, DEFICIT, AND DEBT (By fiscal year)

	1988 Actual	1989 Base	Projections 1990	1991	1992	1993	1994
			In Billions of Dollars				
Revenues	909	983	1,069	1,140	1,209	1,280	1,359
Outlays	1,064	1,138	1,209	1,280	1,344	1,410	1,480
Deficit	155	155	141	140	135	129	122
Deficit Targets	144	136	100	64	28	0	a
Debt Held by the Public	2,050	2,190	2,331	2,469	2,603	2,732	2,853
			As a Percentage of GNP				
Revenues	19.0	19.2	19.6	19.6	19.5	19.5	19.4
Outlays	22.3	22.2	22.2	22.0	21.7	21.4	21.1
Deficit	3.2	3.0	2.6	2.4	2.2	2.0	1.7
Debt Held by the Public	42.9	42.7	42.7	42.5	42.1	41.5	40.7
Reference: GNP (In billions of dollars)	4,780	5,122	5,454	5,812	6,184	6,581	7,006

SOURCE: Congressional Budget Office.

a. The Balanced Budget and Emergency Deficit Control Reaffirmation Act sets targets only through fiscal year 1993.

TABLE II-2. CHANGES IN CBO BASELINE ESTIMATES SINCE AUGUST (By fiscal year, in billions of dollars)

	1989	1990	1991	1992	1993	1994
Revenues						
August 1988 Estimate	980	1,064	1,134	1,202	1,276	1,354
Enacted Legislation	-1	a	a	a	a	a
Economic Reestimates	5	6	8	7	5	5
Technical Reestimates	-1	-2	-2	-1	a	a
Total	3	4	6	7	5	5
Current Estimate	983	1,069	1,140	1,209	1,280	1,359
Outlays						
August 1988 Estimate	1,127	1,200	1,265	1,329	1,397	1,475
Enacted Legislation	a	1	1	a	-1	-5
Economic Reestimates						
Interest rates	5	4	5	4	4	2
All other	a	a	1	1	1	1
Subtotal	5	4	5	6	5	3
Technical Reestimates						
Defense	-2	-2	-2	-2	-1	1
Deposit insurance	7	8	10	6	5	5
All other	1	-1	2	5	5	2
Subtotal	6	4	9	9	9	8
Total	10	9	15	15	13	6
Current Estimate	1,138	1,209	1,280	1,344	1,410	1,480
Deficit						
August 1988 Estimate	148	136	131	126	121	121
Enacted Legislation	1	1	1	a	-1	-5
Economic Reestimates	a	-3	-3	-1	a	-2
Technical Reestimates	7	6	11	9	9	8
Total	7	5	9	9	8	1
Current Estimate	155	141	140	135	129	122

SOURCE: Congressional Budget Office.

a. Less than $500 million.

these are discussed below, in the sections on outlays and revenues. All told, the legislation enacted in September and October had relatively small effects on the deficit outlook, as shown in Table II-2.

Changes in Economic Assumptions. Marginally stronger economic growth in 1988 and 1989, combined with slightly higher inflation, raise projected revenues by $5 billion to $8 billion a year relative to previous forecasts. The higher revenues, however, are almost entirely offset by higher spending that is also traceable to changes in the economic assumptions. Short-term interest rates climbed higher and faster than projected last August; and projected short- and long-term rates exceed the levels previously assumed for most of the five-year horizon. As shown in Table II-2, higher interest rates account for the bulk of economic reestimates to spending. Higher cost-of-living adjustments and other, smaller reestimates also add to spending. On balance, the new economic assumptions affect revenues and spending about equally and have little net effect on the deficit.

Other Changes. Other changes--termed technical reestimates--have worsened the deficit outlook, as shown in Table II-2. Higher spending for deposit insurance is by far the most important of these changes, exceeding previous projections by $5 billion to $10 billion a year. The Federal Deposit Insurance Corporation (FDIC), which insures deposits at commercial banks, accounts for up to $2 billion of the reestimates each year, but most of the increase stems from anticipated higher spending by the Federal Savings and Loan Insurance Corporation (FSLIC). Last year, the chairman of the Federal Home Loan Bank Board, FSLIC's parent agency, indicated that the FSLIC would not issue promissory notes or other obligations in excess of its future income sources; consistent with this announcement, CBO's August baseline assumed that new commitments would not exceed available cash over the next 10 years. On this basis, the FSLIC would have had to stop making new commitments early in fiscal year 1989 if it expected to have cash available for the next 10 years to pay off its prior debts.

Instead, the FSLIC has continued to close insolvent thrifts at a record pace, even though it will not have enough income from existing sources to pay the future costs resulting from these actions. As a result, CBO has changed the assumptions used to prepare the new baseline. Outlays over the 1989-1994 period in the new baseline are about $34 billion higher than projected last August. The outlay projections for FSLIC are described more fully later in the chapter.

Other technical reestimates have mixed effects on the projections. Minor revisions, discussed in a later section, reduce revenues by $2 billion a year or less through 1992, and have negligible effects thereafter. The growth in defense spending slowed somewhat during the final months of fiscal year 1988, and this trend--quite apart from the smaller appropriation noted earlier--is expected to reduce outlays through 1994. Farm price supports are down negligibly in 1989 and by $1 billion to $3 billion a year thereafter because of projected higher prices and continued improvements in demand. The baseline contains lower estimates for subsidized housing and unemployment insurance outlays. More than offsetting these outlay reductions in most years, however, are increases in estimated spending for a variety of programs, notably Medicare, Stafford Loans (formerly known as Guaranteed Student Loans), federal employees' and annuitants' health benefits, and veterans' programs.

While not large in total, the changes just described worsen the deficit outlook and make the Reaffirmation Act targets more difficult to reach. For fiscal year 1990--already the focus of Congressional, executive, and public attention--the projected deficit exceeds the target by $41 billion. Nevertheless, the Reaffirmation Act puts final responsibility for estimating the base deficit and any across-the-board cutbacks on the Office of Management and Budget, whose projections are more optimistic than CBO's. Box II-1 discusses how the act's provisions will shape the coming months' debate over the 1990 budget.

Social Security and the Projections

Social Security helps to hold down the deficit during the 1989-1994 period. With total income to the two Social Security trust funds--Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI)--exceeding benefits and other costs, the Social Security surplus grows from $56 billion in 1989 to $117 billion in 1994, while the deficit in the rest of the budget worsens (see Table II-3).

BOX II-1
THE BALANCED BUDGET ACT COUNTDOWN FOR 1990

The Balanced Budget and Emergency Deficit Control Act--enacted in 1985 and amended in 1987--sets deficit targets as well as automatic enforcement mechanisms. If the baseline deficit appears likely to exceed these targets, the act requires across-the-board cutbacks in spending. For fiscal year 1990, the deficit target is $100 billion. The act allows a $10 billion margin; thus, the expected deficit must exceed $110 billion before the cuts are triggered. The Congress can vote to suspend the act's requirements under certain conditions of slow economic growth, which are not forecast to occur.

If automatic cutbacks occur, the act requires that one-half come from defense spending and the other half from nondefense outlays. Many programs are exempt, including Social Security, certain programs for low-income beneficiaries, and many other benefit programs. Net interest payments cannot be controlled directly and are thus exempt. The act also limits the cuts in several nonexempt programs, primarily Medicare, Stafford Loans (formerly known as Guaranteed Student Loans), and veterans' medical care. The remaining reductions are achieved by uniform cutbacks, or sequestration, of budgetary resources--that is, by canceling agencies' ability to commit some funds.

CBO projects a baseline deficit of $141 billion in 1990, $41 billion above the target. Cutting the deficit by $41 billion wholly through sequestration would require across-the-board reductions of about 10 percent in defense and 16 percent in nondefense, nonexempt programs. If the President chose to exempt military personnel spending, sequestration in the remainder of the defense budget would balloon to 17 percent.

Sequestration, however, does not hinge on CBO's projections. The 1985 act was declared unconstitutional because it gave an executive role to a legislative agency. While the amended act requires CBO to publish advisory reports, final responsibility for estimating the deficit and triggering sequestration rests with the Office of Management and Budget (OMB). Using more optimistic assumptions, OMB currently estimates a 1990 deficit, for purposes of the act, of $126 billion. This estimate would be about $4 billion lower had OMB fully complied with restrictions in the amended act concerning changes in spendout rate assumptions. OMB's estimates would make it easier to preempt a sequestration by enacting alternative deficit reductions, and would shrink the size of automatic cutbacks if they do occur.

Key events under the Balanced Budget Act will occur in August through October 1989, as shown below.

Snapshot date for initial reports	August 15
Initial CBO report	August 21
Initial OMB report and initial sequestration order	August 25
Revised CBO report	October 10
Revised OMB report and final sequestration order	October 16

The Balanced Budget Act requires that revenues and outlays of the two funds be shown as off-budget, a treatment that highlights their contributions to the totals. (Although only Social Security is shown as off-budget in Table II-3, Medicare's Hospital Insurance Trust Fund will join the off-budget totals beginning with the 1993 budget.) Yet accurately measuring the government's borrowing needs and its economic role requires counting all revenues and spending. Following the recommendations of the President's Commission on Budget Concepts in 1967, the government has provided a comprehensive treatment of revenues and spending, an approach favored by economists, financial market participants, and others who must gauge the government's fiscal impact. The Balanced Budget Act adopted the total deficit--including off-budget programs--as the key measure in judging progress toward a balanced budget.

TABLE II-3. CBO BASELINE PROJECTIONS FOR ON-BUDGET AND OFF-BUDGET REVENUES AND OUTLAYS
(By fiscal year, in billions of dollars)

	1988 Actual	1989 Base	Projections 1990	1991	1992	1993	1994
Off-Budget (Social Security)							
Revenues	241	267	290	312	333	355	379
Outlays	203	211	222	234	243	252	261
Surplus	39	56	68	79	90	103	117
On-Budget (All Other Programs)							
Revenues	667	715	779	828	876	925	980
Outlays	861	926	988	1,047	1,101	1,158	1,219
Deficit	194	211	209	219	225	233	239
Total							
Revenues	909	983	1,069	1,140	1,209	1,280	1,359
Outlays	1,064	1,138	1,209	1,280	1,344	1,410	1,480
Deficit	155	155	141	140	135	129	122

SOURCE: Congressional Budget Office.

While the distinction between on- and off-budget programs can confuse observers who understandably seek a single deficit figure, it helps to shed light on the contribution of earmarked receipts. Social Security collects earmarked taxes and other sources of income, using them to pay benefits, administrative costs, and some miscellaneous expenses. Social Security is the largest program that operates in this manner, but there are many others--unemployment insurance and airport and highway programs, to name just a few. Creating a trust fund for such programs is a convenient way to keep track of cumulative spending and income even while making the monies collected available in the interim to the Treasury for general use.

Like other trust funds, when Social Security temporarily relinquishes surplus funds to the Treasury, it receives Treasury securities in return. Social Security holdings grow from $104 billion at the end of 1988 to $618 billion by 1994 in the baseline. These securities can be redeemed when necessary to pay benefits and other costs. (Of course, in order to redeem the securities and pay for Social Security outlays, the Treasury must collect taxes or raise funds in the credit markets.) Interest on Treasury securities is a major source of income to Social Security, growing from $11 billion in 1989 to $45 billion in 1994. These interest payments are an intragovernmental transaction: they contribute identically to the on-budget deficit and to the off-budget surplus. Box II-2 discusses this and other sources of the Social Security surplus.

Economic Assumptions and the Budget Projections

The federal budget is highly sensitive to the economy. Revenues depend largely on wages and salaries, profits, and other taxable incomes. Cash benefit programs--such as Social Security--pay automatic inflation adjustments, while other benefit programs (such as Medicare and Food Stamps) respond to inflation in particular sectors of the economy. Baseline projections also assume that defense and nondefense discretionary appropriations keep pace with inflation, which would otherwise erode real resources for these activities. The unemployment rate affects spending for unemployment insurance and several other pro-

BOX II-2
SOCIAL SECURITY IN THE BUDGET

The treatment of Social Security in the budget often leads to confusion when analysts try to ascertain how much the program spends, what the trust funds receive in income, and how Social Security relates to the total federal deficit. This confusion is not surprising given the seeming contradiction in the Balanced Budget Act, which removed the trust funds from the federal budget but retained them in the totals when calculating the total federal deficit. Compounding the confusion, the trust fund outlays and revenues differ significantly from the totals that are presented as "off-budget." Furthermore, the trust fund surplus overstates Social Security's total contribution to reducing the government's current cash needs. This box explains the differences among the many measures of Social Security.

As shown in the accompanying table, the Old-Age and Survivors Insurance and Disability Insurance trust funds--jointly known as Social Security--receive income from a variety of sources. They collect taxes from wage and salary workers and their employers, and from the self-employed; payments from the federal government as an employer of covered workers; general fund transfers representing the amounts collected from taxes on Social Security benefits; interest on their holdings of federal securities; and other smaller sources. Only the first of these--revenues from the public--is shown as off-budget revenues. The remaining income to the trust funds is reflected on the outlay side of the budget.

Benefit payments are an overwhelming share of trust fund outlays, with relatively small amounts going for administrative costs and other program expenses. Off-budget outlays, however, are much less than trust fund expenses. How can this be? The reason is that income to the program from other portions of the federal government is counted as offsetting receipts (negative outlays). This treatment stems from the budget precept that intragovernmental transfers cannot increase total outlays. For example, interest paid to the trust funds shows up as both an interest cost (on-budget) and an interest receipt (off-budget). Similarly, federal agency contributions for employees who are covered under Social Security increase on-budget spending but decrease off-budget outlays, reflecting Social Security's receipt of these payments.

The widely cited trust fund surplus is the same, whether measured as the off-budget surplus or as the gap between trust fund income and outgo. As shown below, this surplus climbs from $56 billion in 1989 to $117 billion in

1994. But as conventionally measured, the trust fund surplus overstates Social Security's effect on the total federal deficit and, therefore, its effect on the government's overall financing needs. For this purpose, a more useful measure would ignore transfers within the government and focus instead on Social Security's dealings with the public--that is, on revenues and on the benefits and other payments that flow outside the government. Under this framework, Social Security's contribution to holding down the total deficit looks much smaller--about $35 billion in 1989 and $58 billion in 1994, as shown below.

Social Security and Off-Budget Totals
(By fiscal year, in billions of dollars)

	1989	1994
Trust Fund Totals		
Income		
Revenues (a)	267	379
Intrabudgetary receipts (b)		
Interest income from Treasury	11	45
Federal agency contributions	5	8
Other	7	7
Total	290	439
Outgo		
Benefits (c)	227	314
Interest payments to Treasury (d)	1	1
Administration and other (e)	5	7
Total	234	322
Surplus	56	117
Off-Budget Totals		
Revenues (a)	267	379
Outlays (c + d + e - b)	211	261
Surplus	56	117
Effect on Federal Borrowing		
Total Reduction (a - c - e)	35	58

grams, as well as tax collections. Finally, the cost of servicing the government's large and growing debt depends on interest rates.

Uncertainty about the economy's performance feeds uncertainty in budget projections. In the past, as Appendix A shows, errors in the economic assumptions have caused federal deficits to exceed targets set in Congressional budget resolutions. (Most of the budget resolutions used economic assumptions developed by CBO.) Choosing economic assumptions for the Congressional budget resolution requires forecasting economic conditions up to two years into the future. Longer-run projections, such as the five-year estimates described in this chapter, are subject to even greater uncertainty.

One popular way to spotlight the effects of economic performance on the budget focuses on four key variables: real economic growth, unemployment, inflation, and interest rates. Table II-4 shows the estimated changes in budget totals if any of these assumptions were to differ from CBO's baseline assumptions by one percentage point beginning in January 1989. Such illustrations of the isolated effects of individual economic variables on the budget are commonly called rules of thumb.

Real Growth. Assumptions about real economic growth have powerful effects on the budget projections. The baseline assumes that real growth during the 1989-1994 period averages about 2.3 percent a year. Knocking one percentage point from this rate would slow assumed growth to about 1.3 percent and sharply lower the paths of wages and salaries, profits, and other taxable incomes. The gap widens each year: by 1994, total GNP would fall about 6 percent below its baseline level. As Table II-4 shows, the associated revenue losses climb from about $6 billion in 1989 to about $102 billion in 1994. As sluggish growth persists, unemployment also mounts until, by 1994, the unemployment rate exceeds the baseline by three percentage points. Higher spending for unemployment insurance and other benefit programs results. But with time, the outlay category most sensitive to economic growth is not benefit programs but net interest: higher borrowing greatly increases the government's cost of servicing its debt.

TABLE II-4. EFFECTS ON CBO BASELINE BUDGET PROJECTIONS OF SELECTED CHANGES IN ECONOMIC ASSUMPTIONS
(By fiscal year, in billions of dollars)

	1989	1990	1991	1992	1993	1994
Real Growth: Effect of One-Percentage-Point Lower Annual Rate Beginning January 1989						
Change in Revenues	-6	-20	-39	-59	-79	-102
Change in Outlays	1	4	8	14	22	32
Change in Deficit	7	24	48	73	101	134
Unemployment: Effect of One-Percentage-Point Higher Annual Rate Beginning January 1989						
Change in Revenues	-25	-41	-44	-46	-47	-50
Change in Outlays	4	8	13	18	23	28
Change in Deficit	29	49	57	64	70	77
Inflation: Effect of One-Percentage-Point Higher Annual Rate Beginning January 1989						
Change in Revenues	5	17	31	45	63	81
Change in Outlays	4	16	29	43	58	74
Change in Deficit	-2	-1	-2	-1	-5	-8
Interest Rates: Effect of One-Percentage-Point Higher Annual Rates Beginning January 1989, All Maturities						
Change in Revenues	--	--	--	--	--	--
Change in Outlays	3	11	16	20	24	29
Change in Deficit	3	11	16	20	24	29
Interest Rates: Effect of One-Percentage-Point Higher Annual Rates Beginning January 1989, Medium- and Long-Term Maturities Only						
Change in Revenues	--	--	--	--	--	--
Change in Outlays	1	5	9	13	16	20
Change in Deficit	1	5	9	13	16	20

SOURCE: Congressional Budget Office.

Unemployment. The second rule of thumb illustrates the budgetary effects of an increase of one percentage point in the unemployment rate. As the first rule of thumb makes clear, real growth and unemployment are intertwined; this second rule simply presents an alternative path for the two variables. In the CBO baseline forecast, the unemployment rate averages about 5½ percent for the next six years. In this rule of thumb, in contrast, the unemployment rate jumps to about 6½ percent and stays there.

An immediate jump of one percentage point in the unemployment rate would be accompanied by a sharp reduction in output. A well-known generalization, known as Okun's law, links a change of one percentage point in the unemployment rate to a reduction of about 2.5 percent in GNP. In the short run, this output loss is more drastic than in the first rule of thumb, and has more severe budgetary effects. While the nation's idle resources remain permanently above their baseline levels in this rule of thumb, however, the gap between actual and potential output does not widen further. In the longer run, the effect on the deficit is smaller than in the first case, which depicted the effects of prolonged, weak growth.

Inflation. Inflation has complex effects on the federal budget. The third rule of thumb shows the estimated budgetary effects of an inflation rate that is one percentage point higher than in the baseline beginning in January 1989. Thus, this rule of thumb assumes that inflation (as measured by the GNP deflator) averages just over 5 percent annually through 1994, instead of slightly over 4 percent as in the baseline. Real economic growth is held to its baseline path; furthermore, higher inflation is assumed to have roughly the same effect on all prices and wages. Finally, nominal interest rates are assumed to rise by one percentage point as well.

Inflation boosts revenues mainly by increasing taxable incomes. Since tax bases are measured in nominal dollars, the increased incomes that are associated with higher inflation generate added tax revenues even if average tax rates remain unchanged. The potential for inflation, in tandem with the progressive structure of the individual income tax, to raise tax rates by pushing taxpayers into higher brackets is limited by indexation. Annual indexation of the income tax began in 1985 and resumed in 1989 after a two-year suspension that allowed the phase-in of tax reform's new rate structure. As revenues grow with inflation, however, outlays also respond with varying alacrity. Almost all benefit programs (which make up about 40 percent of federal spending) pay cost-of-living adjustments or otherwise respond more or less automatically to inflation. Discretionary programs do not respond automatically, because the Congress must vote anew each year on funding levels for these programs; nevertheless, CBO assumes--as in the baseline--that funding levels grow apace with inflation. Finally, interest rates would almost certainly respond to higher inflation, driving up the government's borrowing costs. As Table II-4 shows, with higher inflation, total outlays increase almost as much as revenues, and only a small change in the deficit ensues. Both the deficit and the debt, though, are smaller relative to a gross national product that is swollen by inflation.

Interest Rates. The last two rules of thumb describe the budget's sensitivity to an increase of one percentage point in the interest rate assumptions. The Treasury must finance and refinance the growing federal debt at prevailing market rates. Raising the assumed interest rate for all Treasury maturities increases estimated outlays by $11 billion in 1990. After five years, almost the entire debt bears the higher interest rates; with three-fourths of the pre-1989 debt refinanced, and about $800 billion in new debt added, interest costs are about $29 billion higher in 1994. (Besides net interest, these estimates reflect small changes in Stafford educational loans and other interest-sensitive programs.) This rule of thumb does not incorporate any potential increases in losses by financial institutions and, hence, increases in federal spending for deposit insurance, because no one is sure just how sensitive such spending is to interest rates. The effects on revenues of higher interest rates are mixed: higher interest rates tend to result in higher incomes for some taxpayers, and in higher earnings for the Federal Reserve System, but larger deductions or lower profits for others. For simplicity, no revenue effect is shown.

The last panel examines the budget's sensitivity to higher interest rates on medium- and long-term maturities only. For the last several years, the Treasury has done the bulk of its new borrowing in these maturities, and the baseline assumes that this practice will continue. Raising the interest rate assumptions for these securities--that is, for maturities of 2 to 30 years--boosts outlays by an estimated $5 billion in 1990 and $20 billion in 1994.

While these rules of thumb clearly show the link between economic assumptions and budget estimates, they have their limitations. Economic variables are related to one another, and sustained changes in one rarely occur in isolation. CBO does not use rules of thumb to project the budget, analyzing instead many economic and other variables that have important budgetary effects. The rules of thumb are not exactly symmetrical. For example, lower real growth, or lower interest rates, would not have exactly the opposite effects from those shown in Table II-4, although the changes would be comparable. Furthermore, Table II-4 shows one-percentage-point changes for simplicity and not to reflect typical forecasting errors. Some variables are notoriously harder to predict than others; for example, a one-percentage-point error in interest rate assumptions is much more likely than a one-percentage-point error in projecting real economic growth over a five-year horizon.

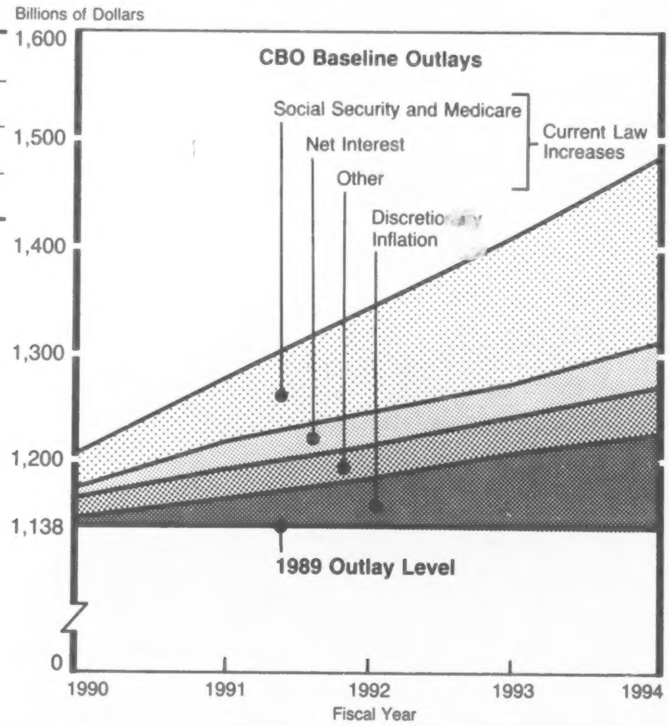
THE FIVE-YEAR OUTLOOK FOR SPENDING

In 1989, the government is projected to spend over $1.1 trillion, an increase of about 7 percent over last year; under current policies, outlays grow to almost $1.5 trillion in 1994. Outlay growth outpaces inflation in all years--by one percentage point or more through 1991, and by a smaller margin thereafter as net interest, deposit insurance, and a few other categories of spending finally taper off.

Most of the projected growth in outlays occurs automatically under current law. Only about a quarter stems from discretionary increases in appropriations that are assumed in the CBO baseline (see Figure II-1). By far the largest contributors to projected growth in outlays are two major benefit programs--Social Security and Medicare--that already make up more than a quarter of total spending. Social Security and Medicare are projected to grow by an average of about 6½ percent and 13 percent a year, respectively, through 1994. Net interest outlays rise steeply through 1991 and more gradually thereafter. Net interest outlays--arguably the least controllable component of spending--are determined by the government's deficit and by interest rates. Other increases in outlays that will occur automatically under current law include greater spending for benefit programs other than Social Security and Medicare (for example, Medicaid and other means-tested programs and federal employees' retirement), deposit insurance, and so forth. The total contribution of this category is held down by declines in some large programs (such as farm price supports), and by growing collections of offsetting receipts.

The remaining growth in outlays would require explicit decisions by the Congress to increase appropriations above their 1989 levels. Such increases, termed discretionary inflation adjustments, are incorporated in the CBO baseline in order to maintain zero real growth in appropriated programs. In the absence of such adjustments, the resources devoted to these programs would gradually be eroded by inflation. In the short run, failing to adjust funding for inflation would not have large budgetary effects. Annual inflation is only about 4 percent under CBO's baseline assumptions, and much of these programs' spending in the near term is already largely determined by past commitments. But with time, inflation's toll would be heavy; by 1994, freezing appropriations at today's levels would imply a real reduction

Figure II-1. Sources of Growth in Outlays



of more than one-fifth. Programs that would dwindle, in real terms, without such adjustments include the nation's defense budget (roughly three-fifths of total discretionary spending) as well as activities in such varied areas as transportation, the environment, basic science and biomedical research, and the administration of justice. Discretionary inflation adjustments also make possible pay raises for the federal government's employees.

Clearly, federal spending can be divided into a number of areas with different purposes and dynamics. The baseline outlay projections are presented here for five broad categories that are commonly used by the Congress to address spending (see Table II-5). Historical spending for these categories--national defense, nondefense discretionary spending, entitlements and other mandatory spending, net interest, and offsetting receipts--is shown in Appendix F, and their past and present shares of GNP are depicted in Figure II-2.

Two appendixes present alternative classifications of budget totals. Appendix C divides spending into 19 budget functions describing particular national needs--defense, administration of justice, health, and so forth--that are addressed by government programs. Appendix D casts both the spending and revenue projections into the format of the National Income and Product Accounts favored by economists.

National Defense

Dominated by Department of Defense activities, this spending category also includes defense-related functions of other agencies such as the Department of Energy's nuclear weapons programs and the intelligence agencies. Total budget authority for defense programs in 1989 is about $299 billion, and outlays total about $296 billion (see Table II-5).

Budget authority for national defense in the baseline increases to keep pace with inflation, at a rate of slightly over 4 percent per year. Pay for this category's 3 million uniformed employees (including reserves) and 1 million civilians is also assumed to keep pace with inflation. Defense outlays grow somewhat less rapidly, especially through

1991, as the relatively small increases in budget authority approved during the mid-1980s continue to constrain spending.

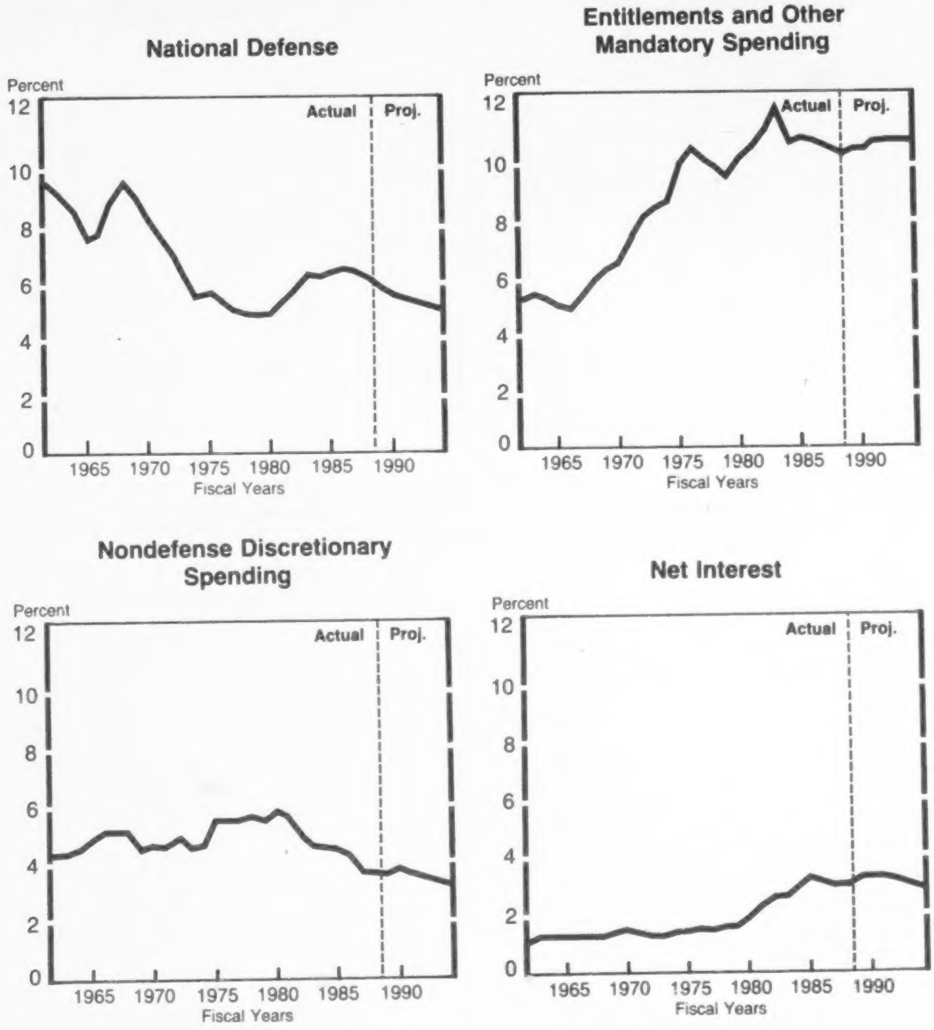
The relationship between defense budget authority and outlays since the 1960s is shown in Figure II-3, in both current and constant dollars. Defense spending surged in the early and mid-1980s, following the large increases in budget authority approved in the final Carter years and President Reagan's first term. Since 1986, however, increases in defense budget authority have failed to keep pace with inflation. Final appropriations for fiscal year 1989 contained about a 2.3 percent increase for defense budget authority over the 1988 level.

TABLE II-5. CBO BASELINE OUTLAY PROJECTIONS FOR MAJOR SPENDING CATEGORIES (By fiscal year)

Spending Category	1988 Actual	1989 Base	Projections				
			1990	1991	1992	1993	1994
In Billions of Dollars							
National Defense	290	296	305	317	329	342	356
Nondefense Discretionary Spending	176	190	206	210	219	225	233
Entitlements and Other Mandatory Spending	501	543	580	628	668	714	764
Net Interest	152	169	182	192	198	203	206
Offsetting Receipts	-55	-60	-64	-67	-71	-75	-79
Total	1,064	1,138	1,209	1,280	1,344	1,410	1,480
As a Percentage of GNP							
National Defense	6.1	5.8	5.6	5.5	5.3	5.2	5.1
Nondefense Discretionary Spending	3.7	3.7	3.8	3.6	3.5	3.4	3.3
Entitlements and Other Mandatory Spending	10.5	10.6	10.6	10.8	10.8	10.9	10.9
Net Interest	3.2	3.3	3.3	3.3	3.2	3.1	2.9
Offsetting Receipts	-1.1	-1.2	-1.2	-1.2	-1.2	-1.1	-1.1
Total	22.3	22.2	22.2	22.0	21.7	21.4	21.1

SOURCE: Congressional Budget Office.

Figure II-2. Outlays by Category as Shares of GNP



National Defense

Entitlements and Other Mandatory Spending

Nondefense Discretionary Spending

Net Interest

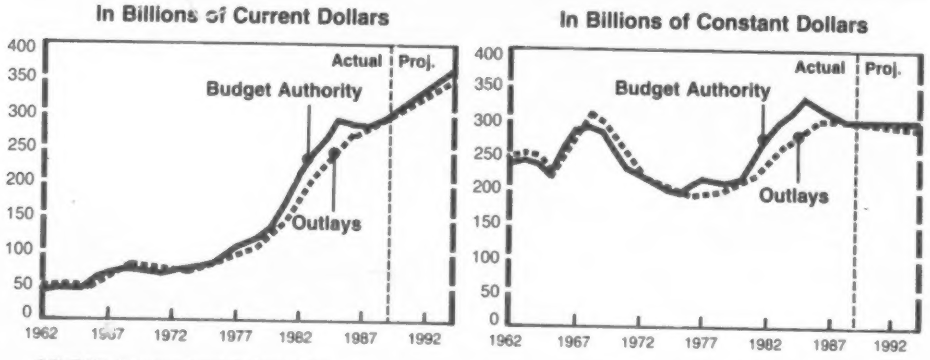
SOURCE: Congressional Budget Office.

Under the baseline assumptions, defense spending would claim a shrinking portion of the nation's output. As a share of GNP, defense outlays fall from about 5.8 percent at present to 5.1 percent by 1994. Since the early 1960s, only in the immediate post-Vietnam years was such a small share of GNP devoted to defense (see Figure II-2). But the nation's economy has expanded greatly during the same period. Therefore, even as defense now represents a smaller share of GNP than during recent decades, real defense spending remains relatively high. As Figure II-3 shows, real outlays still equal or surpass typical levels of the past 25 years.

The defense baseline preserves the mix of activities reflected in the 1989 appropriation. Of the $299 billion in defense budget authority, the largest chunks are for military personnel (about $78 billion), operation and maintenance ($85 billion), and procurement ($80 billion). Another $37 billion is earmarked for research, development, testing, and evaluation, and $10 billion is slated for other Department of Defense activities. The remaining $9 billion goes to other agencies, mainly the Department of Energy. But the Congress and the Administration may elect to change the current priorities.

There may well be pressures to increase defense appropriations to accommodate programs not explicitly included in the baseline. For example, the Administration plans to buy 132 B-2 (Stealth) bombers,

Figure II-3. Defense Budget Authority and Outlays



SOURCE: Congressional Budget Office.

costing about $500 million each. Funding above baseline levels could be sought for this program, and for other weapons programs that are now in the early acquisition stages.

Another defense-related need that is not addressed by preserving the current mix of programs is the modernization and cleanup of defense nuclear plants. These plants, operated by the Department of Energy (DOE) to satisfy the Defense Department's nuclear weapons needs, are aging and pose serious safety and environmental concerns. Currently, the Energy Department cannot safely operate its facilities to produce tritium, a rapidly decaying component of nuclear weapons. Additional funds may be sought to repair existing plants, to build the new facilities (including a new production reactor), and to mend environmental damage. According to a recent DOE report, resolving these problems will apparently cost $81 billion (in constant 1990 dollars) over the next two decades. With inflation, this funding level translates to about $120 billion in budget authority between 1990 and 2010.

Nondefense Discretionary Spending

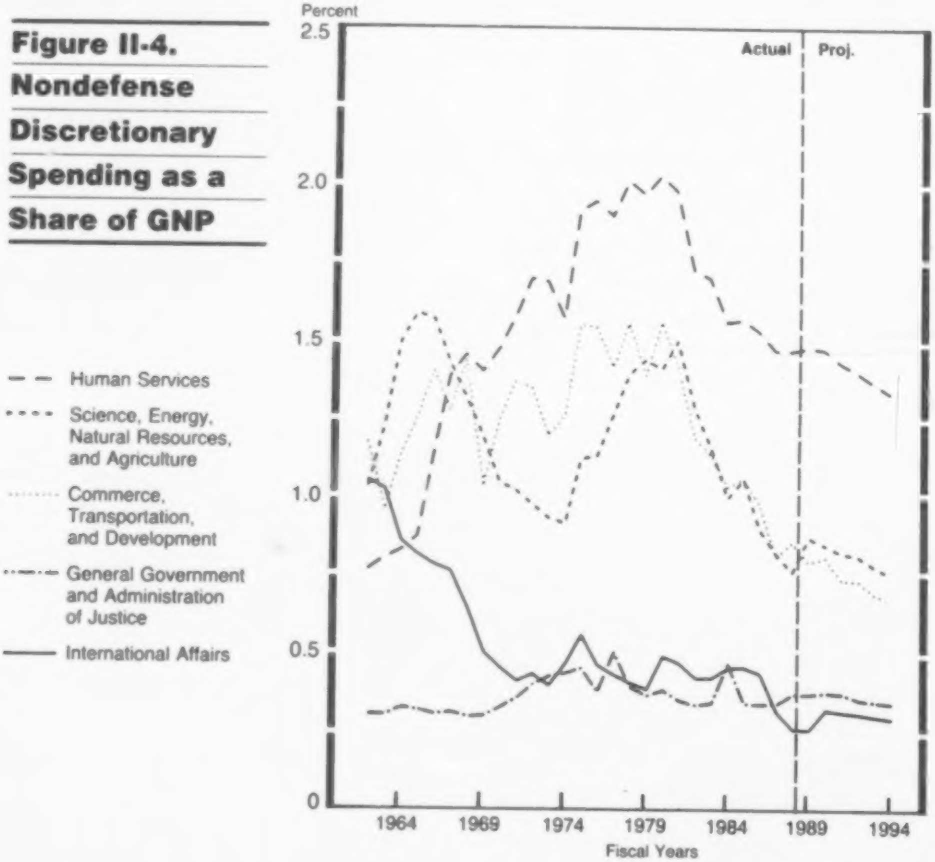
An extremely varied category of spending, nondefense discretionary programs encompass most of the government's activities in the areas of science and space, transportation, medical research, environmental protection, and law enforcement, to name only a few. About one-fifth of nondefense discretionary spending goes toward pay and benefits for civilian agency employees, and about a third reflects grants to state and local governments.

The Congress sets funding levels for nondefense discretionary programs in annual appropriation bills. Just as it does for defense, the baseline assumes that appropriations keep pace with inflation. Outlays grow by about 8 percent between 1989 and 1990, reflecting both the disappearance of some loan prepayments that are expected to hold down outlays in 1989 as well as the full-year cost of 1989's pay raise; thereafter, outlays grow by slightly over 3 percent annually.

As a share of GNP, nondefense discretionary spending, now only 3.7 percent, shrinks further to about 3.3 percent by 1994. Such spending is now a smaller share of GNP than during the past 25 years, and falls well below its peaks during the late 1970s when it generally represented 5½ percent to 6 percent of GNP.

Figure II-4 shows how broad clusters of nondefense discretionary spending have waxed and waned as a share of GNP since the early 1960s. While individual programs within these groups may have fared better or worse than average, Figure II-4 depicts clear shifts in priorities of the federal government during this period. Spending for international affairs--primarily military and humanitarian assistance to other nations--has never again reached typical levels of the 1960s. Outlays for general government and administration of justice have not fluctuated greatly. Commerce and housing credit, transportation, and community development are currently about half as large, relative to GNP, as they were during most of the 1970s. Spending in the areas of science, energy, natural resources, and agriculture shows two distinct peaks: the first occurred during the moon program in the late

Figure II-4. Nondefense Discretionary Spending as a Share of GNP



1960s, and the second reflected the boom in spending for energy and, to a lesser extent, the environment in the late 1970s and early 1980s. Finally, human services programs--ranging from education, training, and social services to medical research and subsidized housing programs--have made up the largest chunk of nondefense discretionary spending for 20 years; they, too, have shrunk from their peaks of the late 1970s.

Entitlements and Other Mandatory Spending

Accounting for nearly half of all federal government spending, entitlements and mandatory programs are those that make payments to any person, business, or unit of government that seeks the payments and meets the criteria set in law. The Congress thus controls spending for these programs indirectly, by defining eligibility and setting the benefit or payment rules, rather than directly through the appropriation process. The best-known entitlements are the major benefit programs--Social Security and Medicare--run by the government, but this category also includes some less obvious programs such as farm price supports. Mandatory programs--such as the deposit insurance activities of the Federal Deposit Insurance Corporation and the Federal Savings and Loan Insurance Corporation--are also included, because the government must carry out the commitments undertaken.

Table II-6 breaks this huge category of spending into its major components. Only about one-sixth of entitlement spending meets the common definition of welfare programs, paying benefits only to those who demonstrate need; most entitlements, even though some of their spending may benefit poor people, are not means-tested.

Means-Tested Programs. Means-tested entitlements grow from $89 billion in 1989 to $129 billion in 1994. Medicaid, a joint federal and state program, is the largest and fastest-growing member of this category. Medicaid primarily covers participants in certain income support programs such as Supplemental Security Income and Aid to Families with Dependent Children, as well as some applicants with greater incomes but high medical expenses. Some Medicaid participants qualify because they are among the working poor who lack other health insurance. Almost three-fourths of Medicaid spending goes

TABLE II-6. CBO BASELINE OUTLAY PROJECTIONS FOR ENTITLEMENTS AND OTHER MANDATORY SPENDING CATEGORIES (By fiscal year, in billions of dollars)

Category	1988 Actual	1989 Base	Projections 1990	1991	1992	1993	1994
Means-Tested Programs							
Medicaid	30	34	38	42	47	52	57
Food Stamps	12	13	14	15	15	16	17
Supplemental Security Income	12	12	12	14	15	16	19
Family Support	11	11	12	13	13	14	15
Veterans' Pensions	4	4	4	4	4	4	4
Child Nutrition	4	5	5	5	6	6	6
Earned Income Tax Credit	3	4	4	4	4	5	5
Stafford Loans[a]	3	3	3	4	4	3	3
Other	2	3	2	2	3	3	3
Total, Means-Tested Programs	82	89	95	104	111	119	129
Non-Means-Tested Programs							
Social Security	217	231	247	264	282	300	318
Medicare	86	97	112	128	144	162	180
Subtotal	303	327	359	393	426	461	498
Other Retirement and Disability							
Federal civilian[b]	30	33	36	39	42	46	47
Military	19	20	21	23	24	26	27
Other	5	5	5	5	5	6	6
Subtotal	54	58	63	67	72	77	80
Unemployment Compensation	14	15	15	16	17	17	18
Other Programs							
Veterans' benefits[c]	15	14	15	16	16	17	17
Farm price supports	12	13	10	11	9	8	6
Deposit insurance	10	15	10	11	6	5	4
Social services	4	5	5	5	5	5	5
Other	7	7	7	6	6	5	5
Subtotal	49	54	48	49	43	40	38
Total, Non-Means-Tested Programs	420	454	485	524	558	595	635
Total							
All Entitlements and Other Mandatory Spending	501	543	580	628	668	714	764

SOURCE: Congressional Budget Office.

a. Formerly known as Guaranteed Student Loans.

b. Includes Civil Service, Foreign Service, Coast Guard, and other retirement programs, and annuitants' health benefits.

c. Includes veterans' compensation, readjustment benefits, life insurance, and housing programs.

toward the aged, blind, and disabled, although they represent less than one-third of participants; much of this spending pays for the costs of long-term care. Rapid growth in Medicaid is fueled by growth in the eligible population, greater use of covered services, rising costs of medical care, and decisions at the federal and state levels--after a period of retrenchment in the early 1980s--to expand coverage to additional needy people.

Other means-tested programs and their estimated spending are shown in Table II-6. The largest programs include Food Stamps; Supplemental Security Income for the aged, blind, and disabled; Family Support Payments (another joint federal/state program, primarily consisting of Aid to Families with Dependent Children); pensions for needy veterans who are aged or disabled; Child Nutrition, which offers the school lunch program; and several others.

Projections of means-tested programs incorporate major legislation enacted since CBO's August report. The Family Support Act approved last fall reformed the nation's welfare system by making dozens of changes in the Aid to Families with Dependent Children (AFDC) and Child Support Enforcement programs. The new law creates a program of education, training, and other work-related services for AFDC recipients, and mandates that all states offer the AFDC-Unemployed Parent program for needy two-parent families. It strengthens child support enforcement via requirements for automatic wage withholding and other provisions. The act also eases the transition to work by extending Medicaid coverage for families leaving AFDC because of employment and by assisting with child care. Together, these changes are expected to boost spending for means-tested programs by about $3.6 billion in 1989 through 1993. (Helping to fund the extra spending, the law also increased revenues and extended the government's authority to subtract delinquent debts, such as overdue loans, from tax refunds.) Another new law, the Hunger Prevention Act, increased benefits across the board in the Food Stamps program.

Non-Means-Tested Programs. The rest of entitlement spending is not means-tested. Social Security and Medicare are by far the largest such programs. Social Security now pays monthly benefits to almost 39 million retired and disabled workers and their spouses, dependents, and survivors. The baseline projections reflect continued growth in the beneficiary population, tapering off from about 1.5 percent in 1989 to 1.1 percent in 1994. In addition, the average benefit rises, because of cost-of-living adjustments and the addition of retirees with recent, relatively high earnings. As discussed earlier, Social Security is funded largely by payroll taxes on covered workers and by a number of smaller, intrabudgetary transfers. Medicare grows much faster than Social Security under current policies despite a number of legislative and regulatory cutbacks in recent years. Growth in the eligible population boosts outlays by about 2 percent a year, and the recent expansions in catastrophic health care coverage--enacted just last year--add significantly to spending in 1990 and beyond. (Provisions of the new law were summarized in CBO's August 1988 report, *The Economic and Budget Outlook: An Update.*) The remaining growth comes from medical care inflation, which is expected to continue to outpace overall inflation, and from greater use of services, the mix of cases, and other factors. Medicare is funded by a mixture of payroll taxes, beneficiary premiums, and general revenues; last year's benefit expansions were fully financed by higher premiums and by a surtax on income taxes paid by some enrollees.

Other retirement and disability programs are dominated by the government's civilian and military retirement programs and by Railroad Retirement. Included in this category is the government's fast-growing contribution for annuitants' health benefits, which almost triples to $7 billion by 1994. Another large program, unemployment compensation, grows little under the baseline assumptions about the economy.

All other entitlements and mandatory programs are projected to total $54 billion in 1989, declining to $38 billion by 1994. This diverse category includes non-means-tested veterans' benefits, currently about $14 billion. Another large program, farm price supports, peaked in 1986 at $26 billion and continues to decline under the baseline assumptions. The 1989 projections for farm price supports include drought assistance enacted last summer. The five-year projections assume average weather and growing conditions, since forecasting the weather accurately for even a few months into the future is clearly impossible. With low soil moisture after last summer's drought, however, the nation's crops will be vulnerable to below-average rainfall. In the absence of special assistance, smaller crops and higher prices generally imply reduced outlays for farm price supports; the opposite is true for bumper crops.

Outlays of the two deposit insurance funds--the Federal Deposit Insurance Corporation and the Federal Savings and Loan Insurance Corporation--are among the most volatile items in the entire budget. In past years, premiums and other income to the funds typically exceeded their costs of aiding troubled financial institutions. As recently as 1986, the FDIC fund held $16 billion in Treasury securities and the FSLIC fund $5 billion, representing their cumulative surpluses over the years. The FDIC fund then failed to grow at all over the next two years, while the more severely troubled FSLIC's holdings dwindled to only $1.6 billion, with about $12 billion in notes payable. Although FSLIC has virtually no cash on hand, its parent agency, the Federal Home Loan Bank Board (FHLBB) is using a variety of techniques to enable it to continue closing and selling institutions. These actions by the FHLBB make possible the levels of spending assumed in the baseline, and will lead to large cash payments in years after 1994. Box II-3 more fully describes the genesis of the savings and loan crisis and its implications for the budget projections.

Net Interest

One of the fastest-growing spending categories in the 1980s, net interest continues to climb in the baseline projections as the government borrows to finance its deficit and refinance its existing debt. While net interest primarily reflects the government's payments to holders of its debt, it also reflects, as an offset, interest income received by the government on loans and cash balances. This interest income shrinks over the forecast horizon.

Net interest grows rapidly in 1989 through 1991, and more slowly thereafter, in the baseline projections (see Table II-6). This pattern occurs because borrowing needs diminish as deficits decline in the projections. More important, however, it reflects the declines in interest rates that characterize the baseline forecast. After cresting in early 1989, both short- and long-term interest rates are assumed to taper off, falling by 1994 to about two percentage points below their current levels (as discussed in Chapter I). Without the assumed declines in interest rates, the baseline projections would look very different. Simply assuming that interest rates stay at current levels, for example,

BOX II-3
THE SAVINGS AND LOAN CRISIS AND THE BUDGET

Conditions in the savings and loan industry have been deteriorating for the last 10 years. Thrift institutions began to run large losses in the high-interest-rate environment of the early 1980s. The Congress, the Federal Home Loan Bank Board (FHLBB), and state regulators addressed thrifts' problems by deregulating interest rates, approving new powers, and relaxing accounting standards and regulatory controls. Losses then mounted as managers, backed by government-insured deposits, made risky loans. In 1986, the collapse of oil prices and the decline in the value of real estate, particularly in the Southwest, created record losses that left about one-third of the industry, or about 1,000 thrifts, either insolvent or marginally profitable.

The Federal Savings and Loan Insurance Corporation (FSLIC), the fund that insures depositors of these institutions, has seen its cash balances dwindle to only about $1 billion as it has attempted to deal with these problems. Furthermore, its estimated liabilities for the next 10 years already exceed its projected income, even if no additional commitments are made. Cash from the FSLIC's usual sources--including assessments, liquidations, and a few billion dollars that remain available through the Financing Corporation (FICO), which was created in 1987--are inadequate to meet its caseload. FSLIC therefore has resorted to issuing notes and guarantees to acquirers of failed institutions, indemnifying new owners against loan losses on covered assets for 10 years or more. In addition, new owners receive tax benefits that raise the federal deficit but are not reflected in the FSLIC's budget.

How long this situation can go on is uncertain. The baseline estimates assume that FSLIC, in the absence of legislation, will continue to issue promissory notes but will also be forced to borrow, most likely through the Federal Home Loan Bank System, to pay for closing or merging more than 450 institutions in fiscal years 1989 through 1991.

In the baseline, CBO projects that the FSLIC will spend about $52 billion for assistance, $14 billion for interest costs, and $2 billion for administrative expenses over the next six years. Partly offsetting these disbursements is an estimated $26 billion in collections, including $9 billion from liquidating assets, $8 billion from assessments, $7 billion from FICO borrowing, and $2 billion in other income. Net outlays over the six-year period total $42 billion, of which most is financed by borrowing ($28 billion) and the remainder almost entirely by additional notes.

While the baseline reflects the intent of the FHLBB to continue addressing its heavy workload, it does not include enough funds to close or merge, at the least cost to the federal government, all thrifts that will need assistance. Estimates of the cost of addressing this problem vary widely, typically ranging from $50 billion to $100 billion (generally on a net present value basis). Such estimates vary depending on assumptions about the underlying size of the problem, the future value of assets, interest rates, and the form and timing of assistance. On a present value basis, the CBO baseline includes only about $35 billion in net spending for case resolution. Thus, substantial additional cash is likely to be needed. Such additional resources might or might not increase the deficit, depending on the details of the financing plan.

would imply additional net interest costs of $4 billion in 1990 and $35 billion in 1994, wiping out the entire improvement in the baseline deficit.

Net interest projections are extremely sensitive to assumptions about interest rates. This sensitivity stems directly from the huge amounts of financing and refinancing conducted by the Treasury. Of the marketable debt outstanding at the end of 1994 in the baseline, about one-fourth reflects new securities issued in 1989 through 1994 to finance deficits, over half represents debt issued before 1989 but refinanced at some point during the six-year period, and only a fifth reflects debt borrowed before 1989 and not refinanced during the 1989-1994 period.

The baseline projections of federal debt are shown in Table II-7. Federal debt held by the public represents cumulative borrowing over

TABLE II-7. FEDERAL DEBT (By fiscal year)

	1988 Actual	1989 Base	Projections				
			1990	1991	1992	1993	1994
	Debt Outstanding (In Billions of Dollars)						
Debt Held by the Public	2,050	2,190	2,331	2,469	2,603	2,732	2,853
Debt Held by Government Accounts	551	675	813	960	1,115	1,282	1,463
Total, Gross Federal Debt	2,601	2,865	3,144	3,429	3,718	4,014	4,316
	As a Percentage of GNP						
Debt Held by the Public	42.9	42.7	42.7	42.5	42.1	41.5	40.7

SOURCE: Congressional Budget Office.

the years to finance deficits, and is closely watched by economists and credit market participants. Each year, federal government borrowing--the change in debt held by the public--approximately equals the total deficit, deviating only because of changes in cash balances and other, minor sources of financing. Amounting to about $2 trillion at the end of 1988, debt held by the public rises to almost $2.9 trillion by 1994 under the baseline projections.

Most of this new money is raised by the Treasury Department, primarily through auctions of bills, notes, and bonds. But while it pales in comparison with the Treasury's activity, borrowing by other agencies is an important element of the projections. These other agencies' debt--a trivial amount before 1988--grows to about $60 billion by 1994. This growth reflects notes issued by the two deposit insurance funds, FDIC and FSLIC, to financial institutions in lieu of cash, as well as funds borrowed by FSLIC from the Federal Home Loan Bank System (see Box II-3). "Agency debt," such as the FDIC and FSLIC notes, has a narrower meaning in the budget than in the financial markets, where it is informally used to describe the securities of government-sponsored but nonbudgetary agencies such as the Federal National Mortgage Association.

While debt held by the public, and borrowing from the public, command the attention of economists and market participants, many people are familiar with a larger figure, the gross federal debt. The gross debt includes, in addition to debt held by the public, large amounts of securities issued to Social Security, Civil Service Retirement, and other federal government trust funds and special funds. Funds receive these securities when they temporarily turn excess cash over to the Treasury for general use, relieving Treasury of the need to raise money in the credit markets. These funds' holdings nearly triple over the 1989-1994 period, as shown in Table II-7, boosting the gross debt to $4.3 trillion by 1994. Since the interest on these securities is both paid and received by the government, it does not raise total net interest nor the deficit; as pointed out in the earler discussion of Social Security, however, such interest is an important entry on the books of individual trust funds.

A familiar measure, the debt subject to limit, is very close to the gross federal debt. The Congress periodically votes a new ceiling on the government's authority to issue debt; when this authority is interrupted, the Treasury can neither auction debt nor invest trust funds fully. The current ceiling, $2.8 trillion, will probably be reached in September 1989.

Offsetting Receipts

Offsetting receipts reflect funds collected by the government that are recorded as negative outlays. More than half of offsetting receipts simply balance payments elsewhere in the budget. These intragovernmental receipts reflect agencies' payments to retirement and other funds on their employees' behalf; such costs are included in agency budgets, and a corresponding receipt is recorded to reflect that the funds have not actually left the government.

The remaining offsetting receipts come from the public and represent voluntary, business-type transactions. Unlike revenues, they do not stem from the government's sovereign taxing powers. The largest item, Medicare premiums, grows from $12 billion in 1989 to $19 billion in 1994 (boosted by charges for recent expansions in catastrophic health care coverage). These premiums mainly represent payments for supplementary benefits that are elected by almost all Medicare participants. Other receipts from the public include timber and oil lease receipts, proceeds from the sale of electric power, and similar income.

THE FIVE-YEAR OUTLOOK FOR REVENUES

Baseline revenues are projected to equal $983 billion in fiscal year 1989 and to pass the trillion dollar mark in 1990, reaching $1,069 billion in that year. Steady increases thereafter push the revenue total to $1,359 billion by 1994. This pattern reflects quite healthy revenue growth of 8 percent to 9 percent annually in 1989 and 1990, boosting the revenue share of GNP from 19.0 percent in the fiscal year just ended to 19.2 percent in 1989 and 19.6 percent in 1990. In the later years, revenue growth slows to 6 percent annually, causing the revenue share to drift downward slightly to 19.4 percent of GNP by 1994 (see Table II-8).

Revenue Growth in the Short and Long Run

The final tally on fiscal year 1988 revealed total revenues of $909 billion--very close to CBO's August 1988 projection and absorbing 19.0 percent of GNP. Although the revenue share of GNP has hit the 19 percent mark or higher only a half-dozen times in the last three decades (including three years in a row in the early 1980s), the baseline projections show it growing in 1989 and 1990 and staying well above 19 percent through 1994 (see Figure II-5). CBO has projected a similar pattern of revenue growth in the 1990s for the past three years.

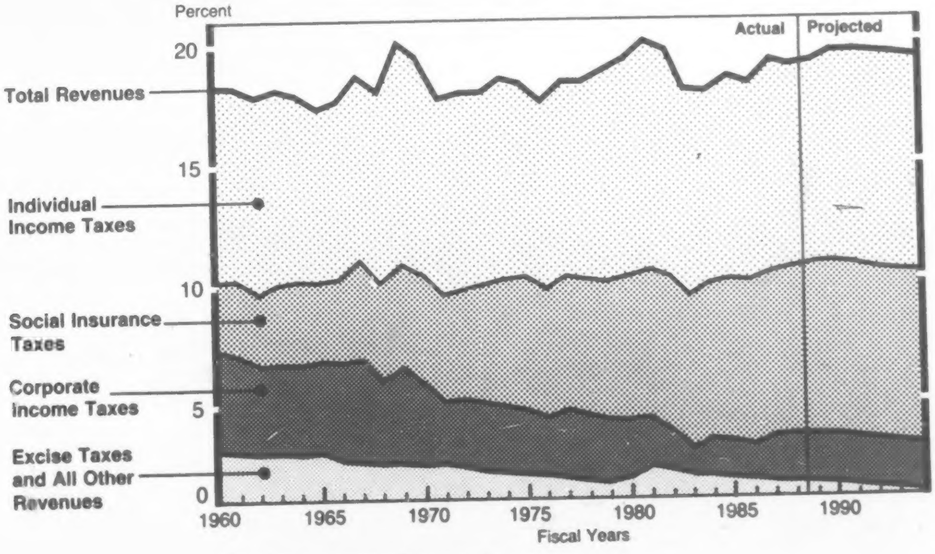
TABLE II-8. CBO BASELINE REVENUE PROJECTIONS BY SOURCE
(By fiscal year)

Major Source	1988 Actual	1989 Base	Projections 1990	1991	1992	1993	1994
In Billions of Dollars							
Individual Income	401	433	481	520	558	596	636
Corporate Income	94	103	112	120	125	129	136
Social Insurance	334	365	391	417	441	468	497
Excise	36	34	34	32	31	32	32
Estate and Gift	8	8	8	8	8	8	8
Customs Duties	16	16	17	19	20	21	22
Miscellaneous	20	23	25	25	26	26	27
Total	909	983	1,069	1,140	1,209	1,280	1,359
As a Percentage of GNP							
Individual Income	8.4	8.4	8.8	8.9	9.0	9.0	9.1
Corporate Income	2.0	2.0	2.1	2.1	2.0	2.0	1.9
Social Insurance	7.0	7.1	7.2	7.2	7.1	7.1	7.1
Excise	0.7	0.7	0.6	0.6	0.5	0.5	0.5
Estate and Gift	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Customs Duties	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Miscellaneous	0.4	0.5	0.5	0.4	0.4	0.4	0.4
Total	19.0	19.2	19.6	19.6	19.5	19.5	19.4

SOURCE: Congressional Budget Office.

Fiscal Year 1989. Revenues' increasing share of GNP in 1989 derives from strong growth in income and payroll tax bases, as incomes command a greater share of GNP. Because over 90 percent of federal revenue is directly influenced by the level and type of activity in the economy, assumptions about personal incomes, corporate profits, inflation, and employment are critical to the revenue profile. Wages and salaries have been quite robust during the first three quarters of 1988, raising the historical base from which the short-term forecast extends. CBO projects that employment income will continue to grow at a faster rate than the overall economy in 1989, though a bit more slowly than in 1988. Other personal income, of which interest income is the largest component, grows more rapidly in 1989 than in the previous three years. These two factors raise the fraction of GNP subject to individual income and payroll taxation. Slightly faster growth of corporate profits in 1989 than in 1988, and slower growth of depreciation deductions under current capital cost recovery rules, cause the corporate tax base to surpass its 1988 share of GNP.

Figure II-5. Revenues by Source as Shares of GNP



SOURCE: Congressional Budget Office.

Fiscal Year 1990. Three major factors contribute to rapid revenue growth in 1990, pushing up the revenue share of GNP by 0.4 percentage point in that year. All three result from previously enacted legislation, some provisions of which become fully effective in 1990.

First, the income-related supplemental premium for Medicare, enacted in 1988 to partially fund the program's expanded coverage for catastrophic health insurance, starts to generate significant revenue in 1990. Because the supplemental premium is effective for only part of fiscal year 1989 and because the payment schedule for this tax will include lags, projected tax collections total only $0.4 billion in 1989 but exceed $5 billion in 1990. Second, the last scheduled increase in payroll tax rates enacted in the Social Security Amendments of 1983 takes effect on January 1, 1990, adding $5 billion to the 1990 revenue total. Third, the Tax Reform Act of 1986 phased in many provisions over several years. With cuts in personal tax rates fully phased in, the associated revenue reductions stabilize in 1990, just as base-broadening provisions become fully effective for the first time. At the same time, the corporate revenue gains increase as the lengthened asset lifetimes in the act's capital cost recovery provisions begin to dominate the profile of tax reform's effects on corporations. Taken together, tax reform's provisions account for $13 billion of the growth in receipts between 1989 and 1990.

The Longer Run. After 1990, revenues grow at an average annual rate of just over 6 percent. With projected economic growth of about 6½ percent per year, revenues' share of GNP slowly falls from 19.6 percent to 19.4 percent between 1990 and 1994. The only major tax source to outpace overall economic growth in the early 1990s is the individual income tax, as steady real growth of 2.2 percent to 2.3 percent a year pushes some taxpayers into higher tax brackets. This effect overpowers the decline in personal income as a share of GNP; falling interest rates in the CBO forecast cause growth in personal interest income to drop considerably, pushing total personal income down as a share of GNP. Interest income, however, is taxed at a low effective tax rate. Wages and salaries, growing faster than the overall economy, are taxed at a much higher effective rate, thus keeping personal income taxes strong.

All other tax sources fail to keep up with the economy. Corporate revenue gains from recent tax law changes either flatten or diminish in the early 1990s. A stable and low unemployment rate yields healthy balances for unemployment insurance, allowing state governments to reduce tax rates; unemployment insurance taxes thus decline each year. Earnings on the Federal Reserve System's portfolio level off over time as interest rates fall. Most smaller tax sources are not particularly sensitive to macroeconomic movements and decline in relation to the economy.

Recent Legislation

The intense level of legislative activity at the end of the 100th Congress affected the revenue side of the budget only slightly. Although seven bills affecting revenues were enacted into law, their combined effect on baseline revenues is well under $1 billion in each fiscal year (see Table II-2). In 1990, they reduce revenues by less than $100 million.

Despite their small budgetary effects, several of these bills are noteworthy because they cap long-standing Congressional efforts in the areas of tax correction, trade, and welfare reform. The Technical and Miscellaneous Revenue Act of 1988 (Public Law 100-647) contains many provisions making technical corrections to the Tax Reform Act of 1986 and other recent legislation. The act also extends and modifies several expiring tax provisions, including the research and experimentation tax credit; increases the number of users who may purchase diesel fuel without paying tax and changes the refund rules for some exempt taxpayers affected by the 1987 change in the collection point of diesel fuel taxes; reforms the funding system for the Railroad Unemployment Insurance program; and further restricts the use of the completed contract method of accounting.

Two major trade laws were enacted last fall, both of which cause revenues to decline because of forgone tariffs on imported goods. The Canada Free Trade Agreement and Implementation Act of 1988 (Public Law 100-449) phases in over a 10-year period mutual duty-free treatment for virtually all goods traded with Canada, the United States' largest trading partner. The Omnibus Trade and Competitiveness Act of 1988 (Public Law 100-418) establishes or extends duty-free treatment for numerous imported products.

The Family Support Act of 1988 (Public Law 100-485) helps to pay for reforming the nation's welfare system by limiting the use of the income tax credit for dependent care and restricting deductions of certain business expenses. Other legislation includes an increase in the number of visas that may be issued, generating additional application fees, and a provision in the Omnibus Drug Initiative Act of 1988 (Public Law 100-690) that changes the budget classification of customs forfeiture fees.

Changes in the Revenue Projections Since August

Since CBO's August report, projected revenues have increased by $3 billion to $7 billion per year, almost entirely because of new economic assumptions. Recently enacted legislation, discussed in detail above, has changed revenues only slightly. Other changes, attributable to assumptions about taxpayer behavior and tax and fee collections, reduce revenues by $1 billion to $2 billion through 1992 and increase them by small amounts in 1993 and 1994 (see Table II-2).

Although CBO's economic assumptions have not changed greatly, inflation was somewhat higher than expected in 1988, raising the recent historical base of the short-term forecast for nominal incomes. Real economic growth in 1989 is now projected to be higher than expected in August. Although a combination of slightly higher inflation and slightly lower real growth after 1989 leaves nominal GNP growing at about the same annual rate as projected in August, the higher point of departure in 1988 and stronger growth in 1989 generate about $15 billion to $20 billion more per year in nominal GNP.

All economic revisions are not unambiguously positive. Wages and salaries are higher by about $20 billion each year under the new assumptions, because of higher levels of GNP and a larger projected share of GNP for wages and salaries. However, business incomes--both corporate profits and entrepreneurial incomes--are lower each year than previously expected. Domestic profits are down even more than total profits; the foreign component of profits, which has been strong, is expected to remain so. Other components of nonwage personal income--interest, rents, and dividends--are also higher than projected in August. The net effect of these factors is to raise the tax base for individual income and payroll taxes, and to lower the tax base for the corporate income tax.

Personal tax payments--income and payroll taxes--are $7 billion to $11 billion higher each year as a result of the new economic assumptions. Projections of corporate income taxes are lower by $4 billion to $5 billion per year. Other tax sources contribute an additional $2 billion in 1989 and 1990 and $1 billion annually thereafter, as higher interest rates generate more earnings for the Federal Reserve System and higher levels of merchandise imports yield greater customs duties.

Technical changes reduce revenues by $1 billion to $2 billion each year from 1989 through 1992. Recent experience with tax collections has led to reductions in estimates of individual and corporate income tax payments for 1989 and 1990, as taxpayers adjust to the many recent changes in tax law. After 1990, the reduction in the corporate tax continues at $2 billion per year, but is increasingly offset by a combination of smaller, upward revisions in other sources. By 1993, technical changes to baseline revenues are very close to zero.

BASELINE CREDIT PROJECTIONS

The federal government affects the allocation of credit by borrowing to finance deficits, by regulation, by lending money directly, and by guaranteeing loans extended by others. The credit budget summarizes these last two activities.

The credit budget supplements the regular budget's description of direct lending. The budget generally shows direct lending on a cash-flow basis; that is, it counts loans disbursed and repayments collected. Thus, programs with huge volumes of transactions may show very small net outlays. The credit budget spotlights the amount of gross lending by these programs. Direct loan obligations are expected to total $17 billion in 1989, as shown in Table II-9, with the Commodity Credit Corporation (CCC) accounting for much of the total. Lending by the CCC, however, is down from mid-decade peaks. The Farmers Home Administration, the Rural Electrification Administration, and the Export-Import Bank also generate large volumes of direct lending.

For future years, the baseline assumes that direct loan programs subject to annual loan limits in appropriation bills are adjusted for inflation. Projections for programs without such limits (including the CCC and several others) represent CBO's best estimate of loan demand.

Commitments for guaranteed loans are projected to total $126 billion in 1989 and $143 billion in 1994; housing loan guarantees by the Federal Housing Administration and the Veterans Administration dominate this activity. Other major guarantors include the Stafford

TABLE II-9. CBO BASELINE CREDIT PROJECTIONS
(By fiscal year, in billions of dollars)

Credit Activity	1988 Actual	1989 Base	Projections 1990	1991	1992	1993	1994
Direct Loan Obligations							
Commodity Credit Corporation	13	7	9	9	8	8	7
Other	14	10	9	10	10	10	12
Subtotal	27	17	18	19	18	18	19
Primary Loan Guarantees							
Federal Housing Administration	50	71	66	70	74	79	84
Veterans Administration	18	21	22	23	24	25	26
Other	33	34	30	31	32	33	33
Subtotal	101	126	118	124	130	137	143
Total							
All Credit Activity	128	143	136	143	148	155	162

SOURCE: Congressional Budget Office.

Loan program and, to a lesser extent, the Export-Import Bank. The Export-Import Bank has begun charging risk-adjusted fees to borrowers, and this action has decreased the demand for such loans. In addition, under special rules enacted by the Congress, Foreign Military Sales loans to several countries will be prepaid in 1989 and replaced with private credits. This refinancing, almost wholly guaranteed by the U.S. government, boosts the loan guarantee totals in 1989, as did similar prepayments in 1988.

The direct lending totals shown in Table II-9 are not strictly comparable with those published in previous years' reports, because of a change instituted by the Office of Management and Budget (OMB). Previously, when the government was forced to make good on a guaranteed loan, OMB simultaneously recorded the resulting outflow as a new direct loan--as if the government had loaned money directly to the defaulting borrower and expected to be repaid. OMB has concluded that this treatment is misleading, and CBO has followed OMB's example. This change reduces the apparent volume of direct lending by roughly $5 billion in 1989. Outlays for loan defaults, of course, continue to be recorded in the spending of responsible agencies and thereby increase the federal deficit. In another change from previous years' treatment, several lending activities in the international affairs function are now excluded from the credit budget totals. These programs are Foreign Military Sales loans that are routinely forgiven, as well as development assistance loans and economic support loans that are more accurately characterized as grants.

Both CBO and the Administration have long argued that current budgetary treatment paints a misleading picture of federal credit activity. Credit programs, which by definition involve the exchange of cash for the promise to repay over time, are often ill-addressed by an accounting system geared to measuring current-period cash flows. In its 1990 budget, OMB again presented its proposal to reform the budgetary treatment of federal credit programs. A key element of the OMB proposal involves replacing credit cash flows for individual programs with estimated subsidy costs, which would be paid by the agencies to a central revolving fund. As required by the Reaffirmation Act, CBO will soon issue its own report discussing and making recommendations on the budget's treatment of credit programs.

CHAPTER III

IMPLICATIONS OF FEDERAL DEFICITS FOR ECONOMIC GROWTH

New attention is being devoted to the outlook for living standards in the United States over the next half century. Economic projections by the Social Security trustees and other analysts show a substantial slowing in the growth of such measures as output and consumption per capita. In large part, the slowdown is caused by the projected effects of the retirement of the "baby-boom" generation early in the next century: a smaller part of the population will be working then, and their output will have to be shared with the larger population of retirees. Observers are worried by this outlook for several reasons: it means that future generations of Americans may inherit a lower rate of growth in living standards than their forebears enjoyed; and, on a more practical level, that social and political strains may arise between workers and retirees.

Faster economic growth would head off many of these problems, since it would increase the amount of goods and services available to be shared. The search for ways to make the economy grow faster has focused on national saving, which is put forward as an important factor in determing long-run economic growth. An increase in saving raises investment, which in turn increases productive capacity. One way to increase national saving and investment would be to reduce the federal deficit.

This chapter reviews the part played by public and private saving in determining economic growth, and the contributions deficit reduction might make to improving the current outlook for growth. The chapter reaches three main conclusions:

- A decline in saving, both by the private sector and by the federal government, has contributed to the prospective long-term decline in the economic growth rate;

- Reduction of the federal deficit is the most promising way to increase saving; an increase in private saving seems unlikely to occur by itself, and in any case cannot be directly controlled by policymakers;

- Saving and investment in the long run will be most affected by the overall deficit, not by components of the deficit such as the Social Security surplus.

The technical discussion in this chapter cannot disguise the fact that reducing the deficit for the benefit of later generations is ultimately a political choice. It means making some sacrifice of consumption now for the sake of higher consumption later. Economic analysis can only help inform that choice; it is up to the voting public to decide whether the future benefits pictured by the analysis in this report justify the sacrifices they would entail.

Other factors besides falling saving and the retirement of the baby-boom generation contribute significantly to the projected decline in economic growth, but are not discussed in detail in this chapter. In particular, growth in the proportion of the population in the labor force, especially women, is expected to slow. The economically active proportion of the population is projected to decline and remain low by historical standards even after the "baby-boom bulge" of retirees has passed from the scene. Growth in productivity, finally, has already slowed significantly, and may not return to earlier rates. Policy measures--such as changes in the age of eligibility for Social Security retirement benefits--could make a difference to some of these prospective developments.

Reducing the federal deficit could have several additional benefits, which also are not the focus of this chapter. It could, for example, reduce interest rates and thus improve prospects for many interest-sensitive sectors in the United States as well as benefiting debt-burdened countries abroad; it could reduce the trade deficit, and with it the inflows of foreign capital to the United States; and it could reduce the likelihood of sharp swings in financial markets.

In order to describe the implications of deficit reduction for the growth of living standards over long periods, this chapter uses certain simplifying assumptions that set it apart from traditional short-run economic analyses of fiscal policy. In particular, the analysis supposes that changes in the deficit and in other components of U.S. flows of saving and dissaving are immediately reflected in changes in investment and, therefore, in productive capital and in potential gross national product (GNP). This type of analysis takes no account of business cycles, which could affect the conclusion that all saving gives rise to changes in capital. Similarly, the chapter does not take account of the role of the budget deficit in stabilizing the economy. Instead, it imagines that the economy is quite stable at high-employment levels of output and that fiscal policy therefore primarily affects the division of national output between consumption and investment, rather than stabilizing the economy.

EFFECTS OF SAVING AND INVESTMENT ON ECONOMIC GROWTH

Concern about the low level of saving in the United States is based on the fact that funds for investment come from saving. Investment determines the extent of capital accumulation, which in turn contributes to the growth of the economy. While little doubt exists that an increase in net investment raises economic growth, there is some uncertainty as to the sensitivity of economic growth to changes in net investment. Economists who have studied this issue, using data from the United States and from other countries, have reached varying conclusions. The principal analytic approach based on historical data, the "growth-accounting" framework, imputes only a moderate degree of importance to the effect changes in investment have on increasing growth. Other approaches, however, imply that investment can be quite effective in raising the growth rate. This section examines these frameworks and estimates the effect of net investment on the growth rate of output.

The Growth-Accounting Framework

Analysis of long-run economic growth is often undertaken using the growth-accounting framework, in which contributions to growth such as labor input, capital accumulation, and overall productivity change are identified and measured. Studies in the growth-accounting tradition suggest that, under certain simplifying assumptions, the contributions to economic growth from growth in labor and capital can be measured by the shares of labor compensation and capital income, respectively, in the value of output. The payments to owners of capital in the United States are about 30 percent of total income. The growth-accounting framework therefore suggests that a 1 percent growth in the capital stock leads to a 0.3 percent growth in output. Similarly, a 1 percent increase in the growth of labor input leads to a 0.7 percent increase in the growth of output. After the contributions of labor and capital have been measured, the remaining portion of overall growth in output is ascribed to "total factor productivity."

The measure of total factor productivity imputed in growth-accounting studies has grown slightly less than 1 percent a year on average in the nonfarm business sector since 1950. Total factor productivity is a residual, the portion of output not directly attributable to labor and capital inputs, and therefore the growth-accounting framework does not provide an explanation for it. Technical progress is certainly a major part of it, but is unlikely to be the whole story.

Since about 1970, the growth of total factor productivity in the private nonfarm business sector worldwide has slowed substantially, for reasons that are not clear (see Figure III-1). One leading explanation for the worldwide slowdown in productivity is the sharp increases in oil prices that occurred in 1973 and 1979.[1] But, given the small weight of energy inputs in overall output, it seems unlikely that the energy shocks could explain all of the slowdown. Growth of total factor productivity has improved somewhat in the 1980s, but has not returned to rates observed two decades ago.

Alternative Frameworks

Most analysts who do not follow the growth-accounting approach have concluded that it understates the contribution that capital accumulation makes to economic growth, and therefore overstates the role directly played by total factor productivity.[2] This view is based mainly on comparisons among countries of the relationships between output growth rates and capital growth rates. After taking account of differing growth in labor forces, these studies attribute a substantially larger proportion of output growth to the capital stock.

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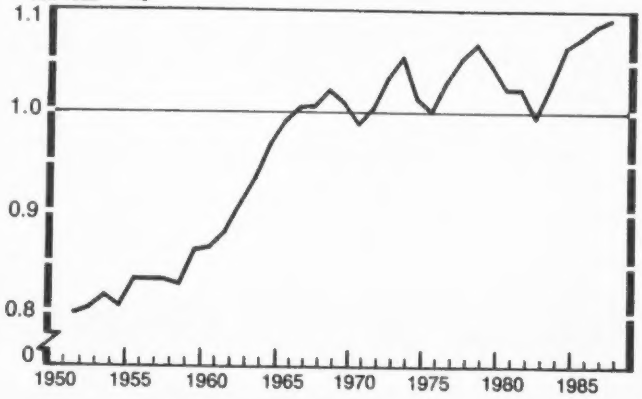
[1] See the Fall 1988 *Journal of Economic Perspectives*.

[2] See, for example, George N. Hatsopoulos, Paul R. Krugman, and Lawrence H. Summers, "U.S. Competitiveness: Beyond the Trade Deficit," *Science* (July 15, 1988).

If these studies are correct, the contribution of capital investment to output growth could be twice as large as suggested by the growth-accounting approach. That is, an increase of 1 percent in the capital stock might raise output by 0.6 percent rather than 0.3 percent. Moreover, since slower growth in capital accumulation has accompanied the slower growth of total factor productivity, these studies find part of what the growth-accounting framework identifies as the slowdown in total factor productivity growth to be the result of lower capital accumulation.

The evidence from these studies is not conclusive, however, in part because they do not explain why growth in total factor productivity should be as sensitive to capital accumulation as these analyses imply. Some of the apparent sensitivity could result from new technology being incorporated in newly purchased capital goods. This is probably a relatively small factor, however, and the apparent relationship remains largely unexplained. Second, some analysts suspect that the apparent relationship may be spurious, because the slowdown in total factor productivity growth that happened to occur at the same time as a slowing of capital accumulation may not imply a causal relationship. In this chapter, the effect of capital accumulation on output is assumed to be greater than the small growth-accounting effect, but not

Figure III-1.
Total Factor Productivity



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Department of Labor, Bureau of Labor Statistics.

NOTE: Total factor productivity in the nonfarm business sector is derived using the growth-accounting model described in Appendix E.

quite as large as that suggested by the alternative approaches--say, in the midpoint of the range of effects.

RECENT TRENDS IN NATIONAL SAVING AND INVESTMENT

As a result of recent trends, the importance of saving and investment to economic growth has gained recognition among policymakers. This section discusses the magnitude and possible causes of the decline in the saving rate in the United States. The budget deficit emerges as a major source of the problem, and as a locus where changes in policy can influence economic growth.

The accumulation of capital has slowed in the United States in recent years, as a result of low gross national saving (both private and public) and a high rate of capital depreciation.[3] Investment has not fallen as much as saving, because funds for investment have flowed in from abroad, but the inflow of funds will probably not continue at such a high level indefinitely. In the very long run, investment and economic growth will largely depend on net domestic saving.

Both public and private net saving have shrunk as a percentage of GNP in the last decade. The sum of real net private and public saving as a share of net national product (NNP) averaged 8.0 percent from 1952 through 1979, but only 3.7 percent in the 1980s (see Figure III-2). Net domestic investment has fallen from an average of 7.8 percent of NNP from 1952 through 1979 to only 5.7 percent during the 1980s. The difference between net domestic saving and net domestic investment during the 1980s represents the net inflow of capital from foreign countries.

Until the 1980s, almost all changes in national saving and investment rates were associated with business cycles. Inflows of net capital were small (and generally negative--that is, the United States was investing abroad in net terms), so net domestic saving and net domestic investment were nearly identical. The saving and investment rates both tended to increase during the early stages of recovery and to decrease during periods of contraction, but no long-run trend was evident.

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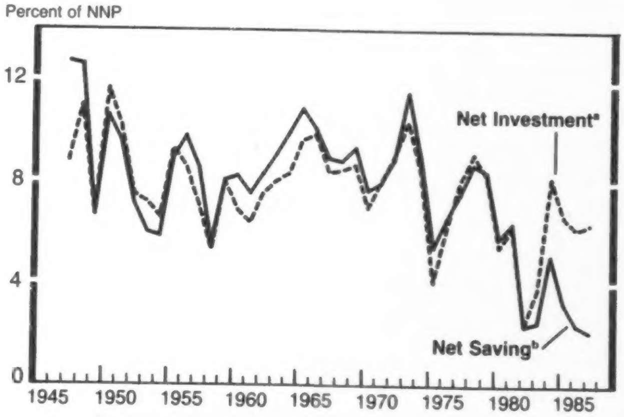
[3] Capital depreciation has risen since the early 1970s because of a shift in purchases of capital goods toward shorter-lived assets, especially computers.

Since the recession of 1981-1982, however, neither saving nor investment has returned to historical norms. The current saving rate is lower than it was in 1983. While the investment rate has risen cyclically, it has still not reached its pre-1980 peak and has attained current levels only through a significant inflow of funds from abroad. Since 1983, net capital inflows have nearly matched net domestic saving, indicating that half of the funds for net investment have been provided from abroad.

Heavy foreign capital inflows raise several issues beyond the overriding problem of low domestic saving suggested by the data in Figure III-2. Strong capital inflows cannot be relied on indefinitely: their continuation at recent rates would require that an ever-increasing share of U.S. domestic income be devoted to servicing foreign debt. It would also increase the chances of a sudden interruption of those flows. Even if continued foreign inflows could be relied on, however, they would be of relatively little economic benefit for Americans, because the income from foreign investment, after U.S. taxes are paid,

Figure III-2. Net Saving and Investment as a Share of Net National Product



SOURCES: Congressional Budget Office; Department of Commerce: Bureau of Economic Analysis.

[a] Real net private investment is gross investment less depreciation, adjusted for the price of investment goods.

[b] Real net national saving is the sum of private and public saving, adjusted for depreciation and the price of investment goods.

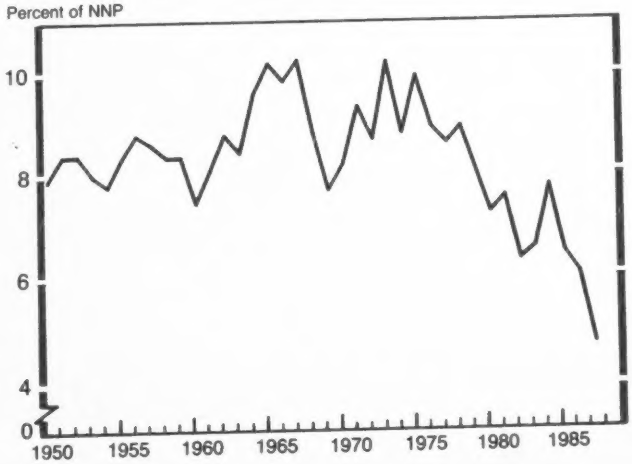
returns abroad as interest and dividend payments to the original investors.

Private Saving and Its Determinants

Net private saving during the 1980s has fallen as a share of net national product by almost five percentage points below its historical average (see Figure III-3). Several factors seem to have contributed to the weakness of private saving in the last two decades. Slower income growth, the rise in household wealth since 1980, and regulations concerning employer contributions to pension plans all seem to have played a role. Also, the increased share of transfer payments in income has been put forward as a reason for declining saving. But other factors often thought to be important in determining private saving do not seem to have been so important. These factors include changes in the return to saving resulting from changes in real interest rates and taxes; government deficits; changes in the perception of future benefits from Social Security; and demographic shifts.

Slower Income Growth. The slowing of income growth since the early 1970s has probably contributed to the decline in the saving rate. As income growth slows, a lower saving rate will suffice to keep household wealth growing at the same rate as income. This relationship is

Figure III-3. Net Private Saving as a Share of Net National Product



SOURCES: Congressional Budget Office; Federal Reserve Board; Department of Commerce, Bureau of Economic Analysis.

NOTE: Net private saving is private saving less depreciation of capital.

likely to become a larger factor in the next half century, when the slowing of labor force growth may cut aggregate growth in income even more.

Changes in Household Wealth. The increase in stock market wealth in the 1980s--correcting many years of apparent stock market undervaluation--probably also helped reduce private saving in the 1980s. By the same logic, the sharp decline in the stock market in October 1987 should have increased saving. Although the personal saving rate rose in mid-1988, insufficient evidence is available to determine whether the increase will persist.

Employer Contributions to Pension Plans. The interaction of interest rates and regulations concerning how much employers must contribute to pension plans is another source of variation in private saving. Employer contributions are treated as part of saving in the national income accounts. Federal regulations enacted in the 1970s require that employer contributions plus interest earnings of the plans meet certain minimal levels. These regulations led to high employer contributions, and therefore an increase in measured saving, during the 1970s when real interest rates were low. During the 1980s, however, rising real interest rates increased the interest earnings of pension funds and made it possible for employers to reduce their contributions and still meet the funding targets. In addition, a rapidly rising stock market enhanced the portfolios of pension funds. As a result, measured saving flows declined in the 1980s.

Transfer Payments. The increased share of transfer payments in personal income since the early 1970s may have contributed to the decline in the saving rate. Transfers are often designed to support the minimal needs of recipients, and therefore little transfer income is saved. For example, much of the growth in transfers has been in health programs where little of the income could be saved. The change in transfer payments occurred at roughly the right time to account for some of the decline in private nonretirement saving in the 1970s, though it does not help explain why saving fell even further in the 1980s.

The Return on Saving. Some analysts have claimed that an increase in the return on saving ought to increase saving.[4] The evidence suggests, however, that any effect may be small. Real interest rates have been substantially higher in the 1980s than in earlier decades, while tax changes in the early 1980s greatly reduced the taxation falling on new savings. Yet the private saving rate fell.

Effects of Government Deficits. Some theorists believe that households increase their saving when government deficits rise, in order to help future generations pay interest on the increased government debt.[5] The theoretical basis for expecting deficits to affect private saving directly rests, however, on assumptions that many theorists reject. In the 1980s, moreover, deficits have grown significantly while private saving has fallen, so recent empirical evidence does not support this theory.

Effects of Social Security. Increases in expected Social Security benefits may reduce private saving, but it seems unlikely that this effect has been significant in explaining the downward trend. Such an effect could occur because households with large expected Social Security benefits do not need to save as much on their own to achieve a given standard of living in retirement. This effect may be offset, however, by the lure of early retirement in a generous system. If households plan retirement earlier in life, the need to save may actually rise.

These conflicting effects of Social Security "wealth" on saving have been tested in empirical work, and the results are inconclusive.[6] A relatively large number of economists believe the effect of Social Security wealth on saving is negative, but such an effect would help explain the recent decline in saving only if expected benefits had risen dramatically relative to expected payroll taxes in the 1980s. But recent legislation has raised Social Security taxes and slowed real benefit growth, so net Social Security wealth has fallen from its level of a decade ago. Moreover, lower expectations of long-run growth in real wages may have further diminished the influence of Social Security wealth on saving.

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[4] See Michael Boskin, "Taxation, Saving, and the Rate of Interest," *Journal of Political Economy* (April 1974); Lawrence Summers, "Tax Policy, the Rate of Return, and Saving," NBER Working Paper No. 995, September 1982; and Alan Auerbach and Laurence J. Kotlikoff, *Dynamic Fiscal Policy* (Cambridge University Press, 1987).

[5] See R. J. Barro, "Are Government Bonds Net Wealth?" *Journal of Political Economy* (November 1974); and "Reply to Feldstein and Buchanan," *Journal of Political Economy* (April 1976).

[6] See Sheldon Danziger, Robert Haveman, and Robert Plotnick, "How Income Transfer Programs Affect Work, Savings, and the Income Distribution: A Critical Review," *Journal of Economic Literature* (September 1981); Martin Feldstein, "Social Security, Induced Retirement, and Aggregate Wealth Accumulation," *Journal of Political Economy* (September 1974); and Henry J. Aaron, *Economic Effects of Social Security* (Washington, D.C.: Brookings Institution, 1982).

Demographic Effects. Demographic changes could also affect private saving, because saving rates vary systematically with age. In the last two decades, young adults and the elderly--both of whom tend to save less than others--have made up an increasingly larger share of the population. However, the differences in saving among age groups are not significant enough to explain much of the decline in saving. The evidence suggests that most of the decline occurred within age groups, and therefore it seems likely that other factors are much more important in determining household saving, even over long periods.[7]

In short, this analysis of private saving does not suggest any reason for optimism that the private saving rate will increase substantially in the near future.

Public Saving

About half of the overall decline in net saving in the United States has occurred in the public sector. The sum of federal, state, and local deficits has increased dramatically as a share of national income since 1980, particularly in the federal sector. In the last two years, however, deficit reduction policies and the Social Security surplus have lessened the rate of federal dissaving (see Figure III-4).

Public saving as measured by the national income accounts represents the extent to which the government contributes to the pool of savings available for private investment. This measure does not take into account the fact that many government expenditures--such

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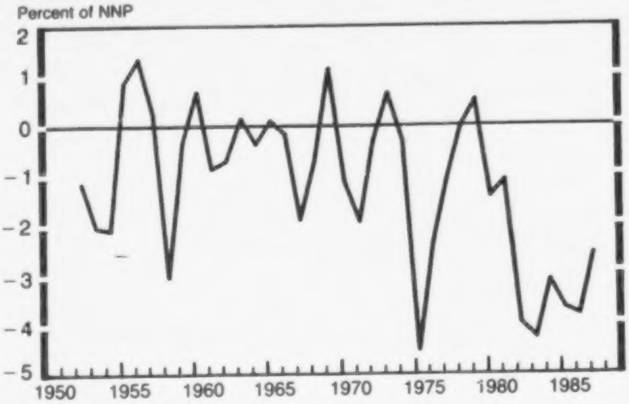
[7] For a discussion of the theoretical effects of a changing age distribution, as well as a critique of its use for projecting saving rates, see Henry J. Aaron, Barry P. Bosworth, and Gary Burtless, *Can America Afford to Grow Old?* (Washington, D.C.: Brookings Institution, 1989), Appendix B.

Figure III-4. Public Saving as a Share of Net National Product



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

NOTE: Public saving is the sum of federal, state, and local government saving.

as those for bridges, education, or research and development--are a form of investment that may contribute as much to growth in output as does private investment spending. Most measures of government investment spending as a proportion of GNP, however, have not changed much in the past three decades, and appear to bear little relation to the pattern of deficits observed historically.[8]

HOW FISCAL POLICY MAY AFFECT LIVING STANDARDS

Recent trends in national saving and investment are particularly disturbing given demographic projections for the next several decades, and their implications for output growth. As the baby-boom generation retires, the fraction of the adult population contributing to output will decline significantly for a number of reasons, and--other things remaining the same--growth of output per population member will fall. Declining national saving could worsen the effect on output. This section evaluates the possibility of offsetting some of the underlying demographic effects on living standards with an increase in government saving, which would be expected to increase investment and therefore future output.

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[8] See Congressional Budget Office, *Trends in Public Investment* (December 1987).

A Growth-Accounting View

The growth-accounting framework that was used earlier in the chapter to analyze the effects of past saving on growth can also be used to make long-run projections of economic growth. Given projections of labor, capital, and productivity, output can be projected by summing the weighted contributions of the three inputs. In practice, labor input is projected using assumptions about birth rates, immigration, labor force participation, and retirement behavior. Projection of the second contributor to production, growth of the capital stock, is based on assumptions about how much income is saved and about deficits. The third contributor, total factor productivity, is assumed to grow at a rate generally consistent with historical experience.

The interactions among the three contributors to production are extremely important. For example, current demographic projections call for a slowing of labor force growth, which will directly slow the growth of total output but will also have effects on capital and potentially on productivity. The decreased levels of output imply (at a given rate of saving) that less will be saved, and hence capital will grow more slowly. In addition, if total factor productivity is related to capital growth, as cross-country comparisons suggest, growth may be slowed even further.

Projected Growth of Labor Input

As the baby-boom generation begins to retire early in the next century, the fraction of adults in the labor force will shrink dramatically. This prospect is illustrated in Figure III-5, which is based on mid-range projections made by the Social Security Administration.[9] Currently about two-thirds of adults are in the labor force, but this fraction will decline to a little over half early in the next century. In addition, demographic projections call for a permanent shift (as opposed to a one-time bulge) toward fewer working people relative to the total population.

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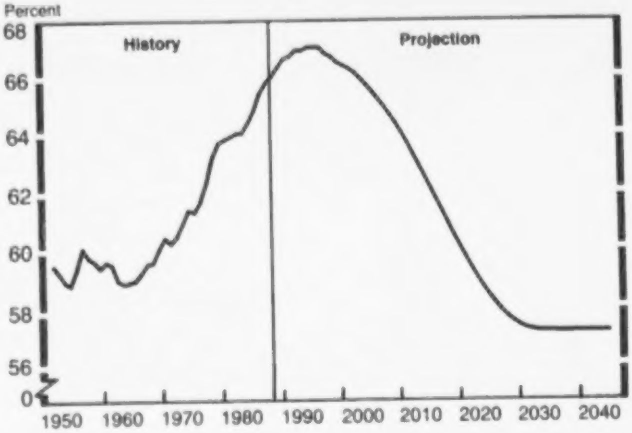
[9] See "Economic Projections For OASDHI Cost and Income Estimates: 1987," Actuarial Study No. 101, Department of Health and Human Services, Social Security Administration, Office of the Actuary (May 1988).

Figure III-5. Labor Force as a Share of the Adult Population



SOURCES: Congressional Budget Office; Social Security Administration.

The expected slowdown in the growth of the labor force has implications for growth in output, which are factored into the projections of GNP made by the Social Security Administration. In the output projections, based on the mid-range labor force projections in Figure III-5, GNP growth slows from its average rate of 3 percent since 1950 to about half that shortly after the year 2000. This projection is consistent with a growth-accounting approach in which the private saving rate and growth of productivity return to their historical norms, and the federal saving rate follows deficit reduction targets and remains zero after 1993.[10]

The projected slowing of output growth from the slowing of growth in labor input implies that future consumption--defined as private consumption plus government provision of goods and services--will not grow as rapidly as it has in the past. Consumption per person has grown about 1.9 percent a year since 1950, but the projections above are consistent with an increase of about 1.3 percent a year. To put this in perspective, a growth rate of 1.9 percent implies that consumption per person will double every 37 years. A growth rate of 1.3 percent a year, on the other hand, implies that consumption per person will double in 55 years.

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[10] The growth-accounting approach was conducted using a modified version of a model developed by researchers at the Brookings Institution, a description of which is provided in Appendix E.

The prospective changes for living standards derived above are consistent with saving rates and growth in productivity that are close to their historical norms. If instead they remain below historical averages, as they have recently, consumption per person will grow even more slowly. Setting growth in productivity at its average for the 1970 to 1987 period, and the federal deficit at its 1988 value of 2.9 percent of gross national product, results in a growth rate of about 0.5 percent a year, implying that a doubling of consumption will not occur until after 131 years.

Improving Prospective Living Standards with Fiscal Policy

The relatively poor outlook for living standards outlined in the preceding section has led many analysts to propose that the federal government run a substantial budget surplus to offset some of the effects of demographic trends on future output. A shift from the current substantial deficit to a surplus would make more resources available to future generations, at the expense of current consumption.

The Reaffirmation Act calls for substantial change in the overall budget position in the next five years, with a balanced budget (including the Social Security surpluses) to be reached by 1993. The inferences about future living standards presented above using the growth-accounting approach are based on the assumption that a balanced budget policy, and therefore a substantial increase in saving above recent rates, would be maintained indefinitely in the years after 1993.

The discussion below describes the projected effects of moving the budget to substantial surplus after 1993, surpassing the legislated targets for the next four years. This discussion is not meant to discount the benefits for future generations of recent deficit reduction measures, or the costs imposed on the current working population in terms of forgone consumption. The relative improvement in living standards discussed below could, for example, be used to assess the gains from recent deficit reduction measures.

Effects on Living Standards of a Fiscal Surplus

The specific policy evaluated below is that of a permanent increase in the overall federal surplus to 2 percent of GNP after 1993. This is an arbitrary choice of surplus, and is used only to illustrate the magnitude of increases in standards of living that could come about from increases in government saving. The consequences for living standards would depend significantly on how investment affects output. In a standard growth-accounting approach, where increases in capital do not have a large effect on output, the benefits would be relatively small. If investment is assumed to affect productivity, however, the benefits to future generations of increasing the current fiscal surplus would be substantial.

If investment increases output in the way suggested by the basic growth-accounting approach, an increase in the federal surplus from zero to 2 percent of GNP after 1993 would raise consumption per person in the year 2040 by about 2 percent. This would be a permanent increase: the higher living standards would continue or become even higher in later years. Current Social Security projections call for consumption per person to be 1.93 times its 1990 value by the year 2040; a 2 percent surplus would raise this ratio to 1.98.

If investment, on the other hand, increases output in the way suggested by existing cross-country studies, consumption per person in 2040 would be higher by about 14 percent, and the same or higher in later years. The contribution of capital to output is approximately twice the growth-accounting level in these studies, and the effect on productivity is cumulative over time. In this case, consumption per person would grow at an average rate of 1.6 percent over the next 50 years, as opposed to 1.3 percent in the zero surplus case. At this rate, consumption per person would double in about 44 years, and reach a level 2.2 times the 1990 value by the year 2040.

The range of possible effects on future living standards from increased fiscal saving is wide. Choosing a value for the expected effect depends crucially on assumptions about how capital accumulation and total factor productivity are related. Based on conclusions reached earlier in this chapter, choosing a value in the middle of the range is reasonable.

In any event, consumption per person is likely to rise following an increase in fiscal saving. It is important to remember that consumption would be lower for a relatively short time following the enactment of such a policy--that is, during the interim in which output had not yet risen enough to offset the increased saving rate. The growth-accounting framework indicates that the period during which consumption would be below the levels that would have obtained in the absence of increased fiscal saving is about ten years. In the case where saving enhances productivity growth, the period of lower consumption would be reduced to roughly five years.

FISCAL POLICY AND THE FINANCING OF SOCIAL SECURITY

The improvement in future living standards that would result from a shift in fiscal policy toward surplus has thus far been discussed independently of the mechanism by which that surplus would be achieved. In fact, significant shifts are likely to take place in the makeup of federal revenues and spending, even if the overall surplus is unchanged. In current projections, for example, the Social Security trust funds will run large surpluses in the next few decades, but will later go into deficit as the baby boom retires. Assuming a constant surplus in the overall budget implies that the *non*-Social Security budget offsets this pattern by running large deficits in the next few decades, followed by surpluses when the baby boom retires.

As stressed throughout this chapter, only a change in the government's *overall* budgetary position will significantly affect future saving and investment: neither the projected Social Security trust fund buildup nor the balance in the non-Social Security budget affects the outlook for these variables except insofar as it helps determine the overall budget balance. The financing of Social Security does, however, affect the equity with which the tax burden is distributed among younger and older taxpayers, and among taxpayers of different income levels; it may also affect incentives to work and save.

Methods of Social Security Financing

Through much of its history, Social Security operated as a "pay-as-you-go" system. In general, the trust funds' receipts roughly matched the benefits being paid out. Changes in the asset positions of the Social Security trust funds--more specifically, the Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI) trust funds--primarily reflected the Congress's goal of insulating the system from business cycles. More recently, under amendments enacted in 1977 and 1983, Social Security has shifted to what is sometimes called a "partial advanced funding" mechanism, whereby revenues collected exceed benefits paid for a period of time, resulting in substantial interest earnings designed to supplement other revenues.

Under the current partial advanced funding mechanism, the Social Security trust funds are projected to collect substantially more in revenues than they are expected to pay in benefits until at least the beginning of the retirement of the baby-boom generation in about 2010.[11] In the interim, the most commonly used projections of the Social Security Administration indicate that trust fund assets--claims on future resources--will grow rapidly, from slightly over \$100 billion (about 2 percent of GNP) at the end of 1988 to about \$9.1 trillion (about 29 percent of GNP) by the year 2020. By that time, federal tax revenues for Social Security will not cover program outlays, but interest payments on the trust funds' accumulated reserves will be more than sufficient to offset the revenue shortfall, and the surplus will still be positive. Ten years later, however, the large reserve is expected to begin diminishing as trust fund securities are redeemed, and it should be depleted by 2048.

The large buildup and subsequent decline in the Social Security trust funds projected under the current partial advanced payment scheme, when viewed in the context of a fixed overall deficit and government spending policy, will shift the composition of federal receipts from one form of taxation to another. There will be heavy reliance on payroll taxes for the next three decades as the trust funds (which rely heavily on payroll taxes) accumulate a surplus and invest it in Treasury securities. After that, the government will have to redeem the trust funds' securities using general revenues, and as a result there will be a shift toward other forms of revenue--most likely, the income tax--as the baby-boom generation retires.

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[11] The 1988 annual reports of the trustees of the Old-Age and Survivors Insurance and the Disability Insurance trust funds present estimates of the financial operations of the funds over the next 75 years under four different sets of economic and demographic assumptions. Under the most pessimistic assumptions, annual surpluses persist through about the year 2015. The trustees' projections under the most commonly used assumptions--the intermediate B or II-B set--show deficits beginning in about 2030. If interest income is excluded, the surpluses disappear under the II-B assumptions beginning about 2019.

The current partial advanced funding system involves higher payroll taxes during the next few decades compared with a pay-as-you-go system, but lower payroll taxes later. The advanced funding approach uses its payroll tax receipts to build up reserves until early in the twenty-first century; if a pay-as-you-go approach were substituted, lower rates would be possible because no buildup in reserves would be needed during this period. On the other hand, payroll tax rates would have to be raised by 2020 under the pay-as-you-go approach to cover high benefit payments when the baby-boom retirement begins in earnest. This increase would not be necessary under partial advanced funding, since benefit payments under that approach would be paid by drawing down reserves.

The federal government would nevertheless have to raise funds under the partial advanced funding approach to redeem the trust funds' securities after 2020. The method that the government chose to raise these funds, when compared with the payroll tax involved in the pay-as-you-go approach, could affect equity among generations and among individuals at different income levels, as well as incentives to work and save. Since most non-Social Security revenues are currently drawn from the individual income tax, most analyses of the equity of the two systems are based on comparisons of the payroll tax and the income tax.

Equity Considerations in Social Security Financing

If funds to redeem trust fund securities under partial advanced funding were raised through increases in income tax rates, more of the burden would fall on older people than under the pay-as-you-go approach. The difference would likely be relatively slight, however.

The burden of the pay-as-you-go approach would be likely to fall more heavily on people at lower incomes than that of the partial advanced funding approach when the baby-boom generation retires. Here again, however, the effect might be slight. Economists generally agree that payroll taxes fall more heavily on low-wage workers than does the income tax, and this accounts for the more regressive nature of the pay-as-you-go system early in the next century.

Incentive Effects of Social Security Financing

The choice between the pay-as-you-go approach and partial advanced funding also affects the disincentives to work and save that are embodied in the tax system. Higher payroll taxes under pay-as-you-go would reduce the return from working, but only for workers at wage levels below the wage ceiling of the tax. After-tax wages would be higher under the partial advanced funding approach with higher income tax rates, but the return from saving would be lower. This effect occurs because the higher tax burden under this approach would fall less heavily on wages and more heavily on property income.

CONCLUSIONS

Under current projections, a smaller share of the population will be working in the United States in the next century. This change implies a slowdown in overall economic growth, with the working population receiving a smaller share of total output. Fiscal policy, through its effects on national saving and investment, can offset these trends somewhat and improve the living standards of future generations, though the change would require less consumption in the near term.

The extent to which increasing saving now would raise living standards in the future cannot be stated with certainty, since the outcome would depend crucially on the uncertain relationship between saving and total factor productivity. If total factor productivity grows independently of saving, the contribution of saving to output growth would be relatively small. If, on the other hand, saving increases growth in productivity as some evidence suggests, the reward to saving may be substantial. Accepting the mid-range of these possibilities, if the federal budget were to move permanently to a surplus of 2 percent of GNP, consumption per person would increase by 8 percent in the long run--though there would first be a period of five to ten years during which the average person's consumption would be lower than if saving had not been increased.

The policy of allocating revenues toward the Social Security trust funds, enacted in 1977 and 1983, does not represent an increase in national saving. It does, however, imply a shift in taxation toward wages in the near term. By the year 2030, taxes will have to shift back to other forms of income as the accumulated trust funds are drawn down. The demographic shift toward a smaller work force in relation to the population also complicates the issue. Current fiscal policy will create the framework in which future policymakers must make their decisions.

APPENDIXES

APPENDIX A

ANALYSIS OF CONGRESSIONAL BUDGET ESTIMATES

The Congressional budget resolution, adopted in the late spring or early summer, is a plan for guiding spending and taxing decisions for the fiscal year beginning the following October. Subsequent authorization and appropriation action is required to turn the plan into law. During the 1980s the actual deficit has consistently exceeded the planned amount. In its August 1987 report, *The Economic and Budget Outlook: An Update*, the Congressional Budget Office analyzed the sources of error in budget resolution estimates for fiscal years 1980 through 1987. The figures for fiscal year 1987 were updated in CBO's February 1988 annual report. This appendix summarizes the analysis of the fiscal year 1988 budget resolution.

The 1988 budget resolution was put together in early 1987. According to the terms of the Balanced Budget Act as it then stood, the resolution was required to show a deficit of no more than $108 billion. Meeting the target was substantially easier under the Reagan Administration's economic forecast than under CBO's forecast. The Administration's forecast for real economic growth in 1988 was almost one percentage point higher than that of CBO, while its long-term interest rate forecast was about one-half a percentage point lower. CBO's less favorable economic assumptions increased the estimated 1988 deficit by $15.4 billion. To a lesser extent, CBO and the Administration also differed over various technical estimating assumptions. CBO's higher estimates for Medicare, Medicaid, and other programs added another $10.4 billion to the deficit estimate.

Both House- and Senate-passed budget resolutions for 1988 were based on Administration economic and technical estimating assumptions. Using the same assumptions, the conference agreement showed a deficit of exactly $108 billion. In their report, however, the conferees noted that the deficit would be $133.8 billion under CBO assumptions.

By the summer of 1987, it had become clear to all that the $108 billion deficit target for fiscal year 1988 was unattainable. In September the Balanced Budget Act was amended, and the 1988 deficit target was increased to $144 billion. On November 20, 1987, Congressional leaders and the President announced that they had reached a budget agreement that would reduce the deficit by $30 billion and avert sequestration.

How did the actual budget totals for 1988 compare with the budget resolution estimates? As reported in the *Final Monthly Treasury Statement*, the 1988 deficit was $155.1 billion (see Table A-1). This amount, however, excludes the Thrift Savings Fund, which was included in the budget resolution. On a basis comparable with the budget resolution, the 1988 deficit was $153.6 billion, which exceeds the budget resolution estimate by $45.6 billion.

Table A-2 divides the differences between the actual outcomes and the budget resolution estimates of revenues, outlays, and the deficit into those resulting from policy, economic, and technical assumptions. Policy assumptions specify the laws and practices that the budget resolution expects to apply--for some programs, those currently in force; for others, some proposed departure. Differences in policy as-

TABLE A-1. COMPARISON OF ACTUAL BUDGET TOTALS AND BUDGET RESOLUTION ESTIMATES FOR FISCAL YEAR 1988 (In billions of dollars)

	Revenues	Outlays	Deficit
Actual Totals	909.0	1,064.0	155.1
Actual Totals Adjusted for Comparability with the Budget Resolution	909.0	1,062.5	153.6
Budget Resolution	932.8	1,040.8	108.0
Difference	-23.8	21.7	45.6

SOURCE: Congressional Budget Office.

TABLE A-2. SOURCES OF DIFFERENCES BETWEEN ACTUAL BUDGET TOTALS AND BUDGET RESOLUTION ESTIMATES FOR FISCAL YEAR 1988 (In billions of dollars)

	Revenues	Outlays	Deficit
Policy Assumptions	-10.9	-2.0	8.9
Economic Assumptions	3.6	11.7	8.2
Technical Assumptions	-16.5	12.0	28.5
Total Differences	-23.8	21.7	45.6

SOURCE: Congressional Budget Office.

sumptions increased the 1988 deficit by $8.9 billion. The budget resolution assumed that tax revenues would be increased by over $21 billion, but only $10 billion in tax increases were enacted pursuant to the budget summit. On the other hand, outlays were cut by $2 billion more than the budget resolution had assumed, primarily in national defense.

Differences in economic and technical assumptions added $8.2 billion and $28.5 billion to the deficit, respectively. Revisions to the National Income and Product Accounts, however, make the allocation of the revenue difference into its economic and technical components even more difficult than usual. Together, these two sources added $36.7 billion to the deficit. If the conferees had used CBO assumptions, the economic and technical difference would have been only $10.8 billion, and the total difference from all sources would have been only $19.7 billion.

APPENDIX B

CONCEPTS AND ASSUMPTIONS UNDERLYING THE CBO BUDGET BASELINE

Each year the Congress examines a variety of proposals that affect the federal budget, and considers the impact on both the current budget and the anticipated path of spending and revenues. The Congressional Budget Office (CBO) baseline provides one possible budgetary path--the pattern federal government revenues and spending would take during the next five years if current policies were continued without change. This path depends in turn on assumptions made about the extrapolation of recently enacted appropriations and about the extension of entitlement and revenue legislation.

CBO is required by section 308(c) of the Congressional Budget Act of 1974 (2 U.S.C. 639(c)) to produce five-year baseline budget projections annually, but is not required to follow a prescribed methodology. Certain concepts and definitions were included in the Balanced Budget and Emergency Deficit Control Act of 1985 (the Balanced Budget Act), as amended and further specified by the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987 (the Reaffirmation Act); these concepts, however, apply only to the one-year baseline used to determine whether sequestration will be necessary in the year ahead. While not required to do so, CBO has elected to adopt those same concepts and definitions--with minor exceptions--in its section 308(c) baseline budget projections for all years.

This appendix presents in two sections the baseline concepts established through long-standing practice and recent legislation. The first defines the revenue and spending components of the budget, and the second describes how baseline projections would differ if certain Balanced Budget Act specifications were relaxed.

DEFINITION OF THE BUDGET BASELINE

The alignment of CBO's budget baseline with the Balanced Budget Act specifications left most budget concepts and definitions unchanged. This section examines the budgetary jargon and explains the major assumptions underlying the budget baseline.

Expenditures

The Congress provides funding for certain federal programs directly, in authorization and other substantive legislation. Spending for all other federal programs is subject to annual review through the appropriation process.

Direct Spending. Provision for federal programs whose funding is specified in authorization and other legislation is considered mandatory in each year's budget. Section 401(c)(2) of the Congressional Budget Act (2 U.S.C. 651 (c)(2)) recognizes several types of direct spending authority, including permanent appropriations for entitlement programs such as Social Security and Unemployment Insurance and for interest on the public debt.

Direct spending also includes appropriated entitlements--entitlement programs whose funding is provided in annual appropriation acts. Among these are benefit programs such as Medicaid, Supplemental Security Income, Aid to Families with Dependent Children, veterans' compensation and pension spending, and other programs. Further, the Reaffirmation Act specifies that the Food Stamp program, while not an appropriated entitlement, is to be included in the list of programs assumed to be fully funded. In addition to appropriated entitlements, CBO, the Office of Management and Budget (OMB), and the House and Senate Budget Committees have developed a common list of appropriations that are considered mandatory for the Balanced Budget Act. The CBO baseline projects full funding for each such program in the 1990-1994 period.

The baseline projections for direct spending programs represent CBO's current estimate of future spending under the baseline economic assumptions. The CBO baseline makes three exceptions to the Balanced Budget Act's general rule that expiring provisions of law providing section 401(c)(2) spending authority expire as scheduled: Food Stamps and Nutrition Assistance to Puerto Rico are extended through the end of fiscal year 1990; Guaranteed Student Loans, now known as Stafford Loans, for new borrowers are extended beyond 1991; and Trade Adjustment Assistance is extended beyond 1993.

The Agricultural Act of 1949, augmented over the years by a succession of reauthorizations, governs the Commodity Credit Corporation's (CCC) spending for farm price supports. The latest of these reauthorizations, the Food Security Act of 1985, controls farm price support levels through the 1990 crop year. The act provides no guidance for the continuation of support prices in later years. Consistent with long-standing practice and following the spirit of the Balanced Budget Act--which specifies, for the budget year, the extension of expiring price support legislation--CBO's baseline assumes extension of the CCC authorization beyond the 1990 crop year. Further, CBO assumes that support prices will continue to decline through the projection period.

Annual Appropriations. Funding for certain appropriated programs may take the form of current budget authority, limitations on an agency's ability to obligate funds, or limitations on direct loans and loan guarantees. Baseline projections for this type of spending assume constant real funding levels in each year--that is, the base-year funding is raised by amounts that allow for annual price increases. The Reaffirmation Act specifies that these annual increments are to be derived separately for the nonpersonnel and personnel portions of spending in each program. The nonpersonnel portion is inflated by the economywide change in prices, as measured by the gross national product (GNP) deflator. The personnel portion is inflated by a more complex process that takes into account the impact of pay raises, pay absorption (funding some portion of the increase in pay rates by hiring freezes and by reducing nonpersonnel spending), and increased retirement costs under the Federal Employees' Retirement System (FERS).

Table B-1 shows the calculation of the inflators. The nonpersonnel budget authority level in an appropriated account for fiscal year 1990, for example, is derived by increasing the fiscal year 1989 appropriation by 4.1 percent, which is CBO's projected 1990 growth rate for the GNP implicit deflator. If the account includes spending for

TABLE B-1. CALCULATION OF INFLATION FACTORS FOR THE PROJECTION OF DISCRETIONARY ACCOUNTS (By fiscal year)

	1990	1991	1992	1993	1994
Inflating the Nonpersonnel Spending in Each Account					
GNP Deflator					
Annual increase	1.041	1.043	1.041	1.041	1.041
Cumulative increase	1.041	1.086	1.131	1.177	1.225
Inflating the Personnel Spending in Each Account					
Civilian Personnel					
Adjustment for full-year unabsorbed cost of previous pay raise	1.041	1.006	1.007	1.006	1.006
(times)					
Adjustment for budget-year pay raise	1.035	1.036	1.035	1.035	1.035
(times)					
Adjustment for increased FERS costs	1.006	1.005	1.005	1.005	1.005
(equals)					
Annual increase	1.084	1.047	1.047	1.046	1.046
Cumulative increase	1.084	1.135	1.188	1.243	1.300
Military Personnel					
Adjustment for full-year unabsorbed cost of previous pay raise	1.012	1.006	1.007	1.006	1.006
(times)					
Adjustment for budget-year pay raise	1.035	1.036	1.035	1.035	1.035
(equals)					
Annual increase	1.047	1.042	1.042	1.041	1.041
Cumulative increase	1.047	1.091	1.137	1.184	1.233

SOURCE: Congressional Budget Office.

civilian personnel, such as an agency's salary and expense appropriation, the fiscal year 1990 level for that portion would be calculated as follows: the fiscal year 1989 level would be increased by 4.1 percent to adjust for the 1990 cost of the January 1989 pay raise, then by an additional 3.5 percent to account for CBO's projected 4.1 percent fiscal year 1990 civilian pay raise with a 22 percent pay absorption rate applied to 70 percent of the costs; the result would be further increased by 0.6 percent to adjust for the added agency costs that result from the new retirement system's coverage of more federal employees in 1990 than in 1989.

In most cases, the level of projected outlays for each account is then calculated by applying an appropriate spendout rate--that is, a measure of how current budget authority is converted into a given year's outlays--and adding any outlays that are estimated to be made in that year from budget authority appropriated in previous years.

Revenues

The CBO baseline includes revenues generated under current tax law. Excise taxes dedicated to trust funds scheduled to expire during the projection period are extended at current law rates through the end of the period, following the Balanced Budget Act baseline.

Five such extensions are assumed. Airport and Airway Trust Fund taxes are extended beyond their scheduled expiration date of December 31, 1990; Leaking Underground Storage Tank (LUST) Trust Fund taxes and Hazardous Substance Superfund taxes are extended beyond their expiration dates in 1991; Vaccine Injury Compensation Trust Fund taxes are extended beyond December 31, 1992; and Highway Trust Fund taxes are extended beyond 1993.

THE EFFECT OF ALTERNATIVE PROGRAM ASSUMPTIONS ON REVENUE AND SPENDING ESTIMATES

This section examines the impact of relaxing certain Balanced Budget Act restrictions on the projection of baseline spending and revenues. Alternatives to the maintenance of constant real funding levels for discretionary spending are identified, followed by possible exceptions to the automatic extension of excise taxes dedicated to trust funds.

Alternative Spending Estimates

Adjusting funding levels for inflation in annually appropriated budget accounts is only one way to define the later-year path of current policy. CBO analysts have examined the projection methodology underlying appropriated accounts, and have estimated the impact of allowing more flexible projection assumptions. Permitting such flexibility would increase baseline outlays by roughly $1 billion in 1990; this figure would rise to nearly $4 billion by 1994.

These accounts fall into three categories: accounts whose base-year funding includes transfers from other programs; accounts whose program authorizations expire or reach the Congressionally set ceilings during the projection period; and accounts whose later-year program characteristics are not reflected in the base-year funding.

Accounts whose base-year funding includes transfers from other programs. The availability of unspent funds from previous years' appropriations or transfers from other programs reduced the 1989 appropriation for certain federal programs. In the budget year and beyond, however, when these prior balances and transfers are not available, additional appropriations would be required to maintain the 1989 program level. Therefore, the spending levels projected from this temporary reduction could be viewed as an underestimate of program needs.

Accounts whose program authorizations expire or reach the Congressionally set ceilings during the projection period. The calculation of future budget authority by inflating the base-year values can exaggerate funding needs for programs that expire or reach spending ceilings later in the projection period. Recognizing these expirations and ceilings would result in lower baseline levels for budget accounts such as the federal payment for St. Elizabeth's Hospital, which is limited by law to $52 million a year.

Accounts whose later-year program characteristics are not reflected in the base-year funding. For example, baseline funding for the 1990 decennial census is set at the inflation-adjusted 1989 appropriation; maintaining this constant real level in the projection period understates the large expenses due in 1990, and overstates the smaller program levels in later years. Similarly, the CBO baseline does not include additional budget authority to cover the extension of subsidized housing contracts (Section 8 Rental Assistance) that expire in 1991 and later years. To fully fund the renewals, additional appropriations--ranging from $26 billion in 1991 to $13 billion in 1994--would be needed. Outlays would rise by more than $1 billion in 1991, and by almost $4 billion by 1994.

Alternative Revenue Estimates

Under baseline concepts used before the Balanced Budget Act, revenues earmarked for two trust funds--the Leaking Underground Storage Tank (LUST) Trust Fund and the Vaccine Injury Compensation Trust Fund--would not have been extended. Both are relatively new programs with no history of legislated extensions, and both provide funding for programs of specified dimensions that will terminate when certain limits or deadlines are reached. The law provides that LUST taxes will terminate before their scheduled expiration date if cumulative net revenues have reached a total of $500 million. The Vaccine Injury Compensation Trust Fund imposes excise taxes on doses of certain vaccines to provide awards to persons affected by vaccine-related injuries. Once a maximum number of awards has been made and paid for by the tax, the program will terminate; otherwise, it will expire on December 31, 1992. Allowing these two trust funds to expire would have no effect on revenues before 1991, and would remove quite small amounts each year from 1991 through 1994 (see Table B-2).

TABLE B-2. EFFECT ON BASELINE PROJECTIONS OF ALLOWING ALTERNATIVE PROGRAM ASSUMPTIONS
(By fiscal year, in billions of dollars)

	1990	1991	1992	1993	1994
Revenues					
Differences Resulting From:					
Expiration of Leaking Underground Storage Tank Trust Fund Taxes	--	-0.1	-0.1	-0.1	-0.1
Expiration of Vaccine Injury Compensation Trust Fund taxes	--	--	--	-0.1	-0.1
Revenue effect, total	--	-0.1	-0.1	-0.2	-0.2
Outlays					
Differences Resulting From:					
Availability of prior-year balances	a	0.2	0.3	0.4	0.4
Program expirations or ceilings	-0.1	-0.1	-0.2	-0.2	-0.3
Program characteristics					
Subsidized housing renewals	a	1.1	2.1	3.1	3.8
1990 decennial census expenses	0.9	-0.3	-0.4	-0.5	-0.6
Miscellaneous accounts	0.2	0.3	0.3	0.3	0.3
Subtotal	1.2	1.2	2.1	3.0	3.5
Outlay effect, total	1.1	1.2	2.2	3.1	3.6

SOURCE: Congressional Budget Office.

NOTES: A negative difference implies that the baseline projection would be lower by that amount if the alternative program assumption were used in the CBO baseline; a positive difference implies that the projections would be higher.

a. Less than $50 million.

APPENDIX C

BASELINE SPENDING AND CREDIT PROJECTIONS BY BUDGET FUNCTION

Five broad categories of outlays--defense, entitlements and other mandatory spending, nondefense discretionary spending, net interest, and offsetting receipts--used in the body of this report are designed to reflect the way in which the Congress has approached spending decisions in recent budget resolutions. In this appendix, federal spending and credit projections are classified according to 19 budget functions.

The Congressional Budget Act of 1974, as amended, requires the Congress to include estimates of budget authority, outlays, new direct loan obligations, and new guaranteed loan commitments for each major budget function in its annual budget resolutions. The functional classification is a means of presenting spending estimates in terms of the broad national needs that federal programs are intended to address. Within a function, the programmatic objectives may be achieved in a variety of ways, including spending from Congressional appropriations, loans to private borrowers, and spending from earmarked trust funds.

National needs are grouped into 17 broad budget functions ranging from national defense, international affairs, energy, and agriculture programs to education, health, income security, and general government. The two remaining functions--net interest and undistributed offsetting receipts--do not address national needs but are included to make the budget complete. Two functions--general purpose fiscal assistance to state and local governments, and allowances--are no longer shown separately. General purpose fiscal assistance is now included in the general government function. The cost of future pay raises for federal civilian employees that had been in the allowance function is now distributed throughout the remaining functions in the baseline projections.

Some outlays are excluded from the on-budget totals by law. The Balanced Budget and Emergency Deficit Control Act of 1985 provides that the outlays (and revenues) of the Social Security trust funds are to be excluded from the on-budget aggregates. Outlays for the Social Security retirement, survivors, and disability programs are classified in budget function 650. Most spending in this function--representing the outlays of the Old-Age and Survivors Insurance and Disability Insurance trust funds for benefit payments, administrative expenses, and other miscellaneous costs--is treated as off-budget. Off-budget outlays in net interest (function 900) reflect the interest earned by the Social Security trust funds on their investments in Treasury securities, while the off-budget portion of function 950 (undistributed offsetting receipts) reflects the payroll tax paid by federal government agencies on behalf of workers covered under the program.

Since 1980, Congressional budget resolutions have also included a separate credit budget. The spending budget, which generally operates on a cash-flow basis, cannot accurately reflect the full impact of federal budgetary policies on the allocation of credit in the U.S. economy. In the spending budget, loans are recorded on a net basis--that is, new loans less repayments. Loan guarantees do not appear except in the case of a default. The credit budget remedies some of these shortfalls by presenting the gross amounts of new loans and loan guarantees. Most credit budget activity is concentrated in a few budget functions: international affairs, agriculture, commerce and housing credit, education, and veterans' programs.

The CBO baseline projections for budget authority, outlays, and credit are presented by budget function in Tables C-1, C-2, and C-3, respectively.

TABLE C-1. CBO BASELINE BUDGET AUTHORITY PROJECTIONS BY FUNCTION (By fiscal year, in billions of dollars)

Budget Function		1989 Base	Projections				
			1990	1991	1992	1993	1994
050	National Defense	299	312	325	339	353	368
150	International Affairs	16	18	19	20	21	22
250	General Science, Space, and Technology	13	13	14	15	15	16
270	Energy	5	6	6	7	7	8
300	Natural Resources and Environment	17	18	18	19	20	21
350	Agriculture	23	19	20	20	16	14
370	Commerce and Housing Credit	23	23	21	15	16	14
400	Transportation	29	30	31	32	33	35
450	Community and Regional Development	7	7	7	7	7	7
500	Education, Training, Employment, and Social Services	38	39	40	41	43	44
550	Health	51	57	63	69	75	82
570	Medicare	107	122	133	147	161	176
600	Income Security	177	186	195	203	213	224
650	Social Security						
	On-budget	6	6	4	5	6	6
	Off-budget	283	312	341	369	400	432
	Subtotal	289	317	345	374	405	438
700	Veterans' Benefits and Services	30	31	32	33	34	35
750	Administration of Justice	10	10	11	12	12	13
800	General Government	9	10	11	11	12	12
900	Net Interest						
	On-budget	180	199	215	228	241	252
	Off-budget	-11	-17	-23	-30	-37	-45
	Subtotal	169	182	192	198	203	206
950	Undistributed Offsetting Receipts						
	On-budget	-32	-34	-36	-37	-38	-40
	Off-budget	-5	-5	-6	-6	-7	-8
	Subtotal	-37	-40	-41	-43	-45	-48
On-budget subtotal		1,006	1,072	1,131	1,186	1,246	1,308
Off-budget subtotal		267	290	312	333	355	379
Total		1,273	1,362	1,443	1,519	1,602	1,687

SOURCE: Congressional Budget Office.

TABLE C-2. CBO BASELINE OUTLAY PROJECTIONS BY FUNCTION
(By fiscal year, in billions of dollars)

		1989	Projections				
Budget Function		Base	1990	1991	1992	1993	1994
050	National Defense	296	305	317	329	342	356
150	International Affairs	11	16	17	17	17	18
250	General Science, Space, and Technology	13	13	14	14	15	16
270	Energy	4	4	4	5	5	6
300	Natural Resources and Environment	17	17	18	19	20	20
350	Agriculture	20	15	16	15	12	11
370	Commerce and Housing Credit	21	18	16	12	10	9
400	Transportation	28	29	30	32	33	34
450	Community and Regional Development	6	7	6	6	6	7
500	Education, Training, Employment, and Social Services	36	38	39	41	41	43
550	Health	50	56	62	68	74	81
570	Medicare	87	101	116	130	146	164
600	Income Security	137	145	153	161	170	179
650	Social Security						
	On-budget	6	6	4	5	6	6
	Off-budget	227	244	262	279	296	314
	Subtotal	233	249	267	284	302	321
700	Veterans' Benefits and Services	29	31	32	33	34	35
750	Administration of Justice	9	10	11	12	12	13
800	General Government	9	10	11	10	11	11
900	Net Interest						
	On-budget	180	199	215	228	241	252
	Off-budget	-11	-17	-23	-30	-37	-45
	Subtotal	169	182	192	198	203	206
950	Undistributed Offsetting Receipts						
	On-budget	-32	-34	-36	-37	-38	-40
	Off-budget	-5	-5	-6	-6	-7	-8
	Subtotal	-37	-40	-41	-43	-45	-48
On-budget subtotal		926	988	1,047	1,101	1,158	1,219
Off-budget subtotal		211	222	234	243	252	261
Total		1,138	1,209	1,280	1,344	1,410	1,480

SOURCE: Congressional Budget Office.

TABLE C-3. CBO BASELINE CREDIT PROJECTIONS BY FUNCTION
(By fiscal year, in billions of dollars)

Budget Function			1989 Base	Projections 1990	1991	1992	1993	1994
150	International Affairs	DL	2	2	2	2	2	2
		PG	11	6	7	7	7	8
270	Energy	DL	2	2	2	2	2	3
		PG	1	0	0	0	0	0
300	Natural Resources and Environment	DL	a	a	a	a	a	a
350	Agriculture	DL	9	10	10	9	9	9
		PG	6	6	6	6	6	6
370	Commerce and Housing Credit	DL	3	2	2	3	3	3
		PG	74	69	73	78	83	88
400	Transportation	DL	a	a	a	a	a	a
450	Community and Regional Development	DL	1	1	1	1	1	1
		PG	a	a	a	a	a	a
500	Education, Training, Employment, and Social Services	DL	a	a	a	a	a	a
		PG	13	14	15	15	15	15
550	Health	DL	a	a	a	a	a	a
600	Income Security	DL	a	a	a	a	a	a
		PG	a	a	a	a	a	a
700	Veterans' Benefits and Services	DL	1	1	1	1	1	1
		PG	21	22	23	24	25	26
800	General Government	DL	0	a	0	0	0	0
	Total	DL	17	18	19	18	18	19
		PG	126	118	124	130	137	143

SOURCE: Congressional Budget Office.

NOTES: DL = New direct loan obligations.
PG = New primary loan guarantee commitments.

a. Less than $500 million.

APPENDIX D

FEDERAL RECEIPTS AND EXPENDITURES IN THE NATIONAL INCOME AND PRODUCT ACCOUNTS

Both the budget and the federal sector of the National Income and Product Accounts (NIPA) measure the receipts and expenditures of the federal government. The national income accounts, published by the Department of Commerce, measure current income and production in all sectors of the economy and are the most widely used indicators of current economic activity. While similar to the budget, the NIPA federal sector is often more useful for analyzing the economic impact of federal government activity. The NIPA treatment of federal government activity differs from that of the budget in four ways: the netting and grossing of receipts against spending, exclusion of lending and financial activities, timing adjustments, and coverage.

Differences in netting and grossing arise because two types of collections are treated as negative outlays in the budget, but are moved to the receipts side in the NIPA. The first represents contributions by federal agencies to the Civil Service Retirement Trust Fund, Social Security, and other benefit plans. As an intrabudgetary transaction, this transfer represents both a cost to the employing agencies and a receipt to the retirement fund. The second type of transaction consists of voluntary payments from the public (such as Medicare premiums and mineral leases), which are also recorded as negative outlays. Clearly, moving these collections from expenditures to receipts does not affect the measured deficit. It does, however, more accurately depict the government's total collections from all sources.

Lending and financial transactions that involve only the exchange of existing assets and liabilities are generally excluded from the NIPA, since they generate no current income or output. For example, the sale of a government asset such as Conrail reduces the budget deficit but has no effect on the NIPA deficit. Similarly, direct lending by the Export-Import Bank, the Farmers Home Administration, and other agencies is excluded from the NIPA, as are any payments by the government to make good on guaranteed loans in default. (Interest paid or received in the course of financial transactions, of course, is reflected in the NIPA federal sector). Bonuses on Outer Continental Shelf land leases--much smaller now than in the early 1980s--also reflect the exchange of existing assets and are excluded from the NIPA. Nonrecourse agricultural loans are an exception to the general rule. Many of these loans, extended by the Commodity Credit Corporation, are not repaid but instead result in the government's acquisition of crops pledged as collateral. The income and product accounts count these loans as additional nondefense purchases when they are made, and as a reduction in purchases if they are subsequently repaid and CCC inventories reduced.

In its latest projections, CBO has significantly boosted its outlay estimates for the two deposit insurance funds, the Federal Deposit Insurance Corporation and the Federal Savings and Loan Insurance Corporation. Spending for deposit insurance, though, is akin to payments for loan defaults, and does not directly generate higher profits or other income. Thus it is excluded from the NIPA measures of federal spending.

Timing differences occur because the budget records most transactions (except interest owed to the public) on a cash basis, while the NIPA federal sector may substitute an accrual or other basis where appropriate. On the receipts side, the most important timing difference is the recording of corporate profit taxes in the NIPA at the time the tax liability is incurred, which may be months (or years) before the tax payment is deposited in the Treasury. On the expenditure side, the only major timing difference is the inclusion of some large defense purchases in the NIPA at the time of delivery, rather than at the time payment is made. Other timing differences are generally small.

Differences in coverage largely reflect the exclusion of Puerto Rico, the Virgin Islands, and other territories for purposes of computing the gross national product and related data series in the NIPA.

The major differences between the budget and the federal sector in the NIPA are detailed in Table D-1. Table D-2 shows estimates of federal sector receipts and expenditures on a NIPA basis, consistent with current CBO baseline budget projections.

TABLE D-1. RELATIONSHIP OF THE BUDGET TO THE FEDERAL SECTOR OF THE NATIONAL INCOME AND PRODUCT ACCOUNTS (By fiscal year, in billions of dollars)

	1989 Actual	1989 Base	Projections				
			1990	1991	1992	1993	1994
		Receipts					
Total Revenues (Budget Basis)[a]	909	983	1,069	1,140	1,209	1,280	1,359
Differences							
Netting and grossing							
Government contributions for employee retirement	39	41	43	46	49	53	56
Medicare premiums	9	12	13	15	17	18	19
Other	8	10	10	10	10	11	11
Geographic exclusions	-2	-3	-3	-3	-3	-3	-3
Other	2	-6	b	1	1	1	1
Total differences	56	54	65	69	74	79	84
Total Receipts (NIPA Basis)	965	1,037	1,133	1,209	1,283	1,359	1,443
		Expenditures					
Total Outlays (Budget Basis)[a]	1,064	1,138	1,209	1,280	1,344	1,410	1,480
Differences							
Netting and grossing							
Government contributions for employee retirement	39	41	43	46	49	53	56
Medicare premiums	9	12	13	15	17	18	19
Other	8	10	10	10	10	11	11
Lending and financial transactions							
Bonuses on Outer Continental Shelf land leases	1	1	2	1	1	1	1
Other	-15	-19	-18	-19	-14	-13	-12
Defense timing adjustment	7	3	3	2	2	1	b
Geographic exclusions	-6	-6	-7	-7	-7	-8	-8
Other	b	-2	-2	-3	-3	-3	-4
Total differences	42	39	45	46	54	60	63
Total Expenditures (NIPA Basis)	1,106	1,177	1,255	1,326	1,398	1,469	1,543

SOURCE: Congressional Budget Office.

a. Includes Social Security.

b. Less than $500 million.

TABLE D-2. PROJECTIONS OF BASELINE RECEIPTS AND EXPENDITURES ON A NATIONAL INCOME AND PRODUCT ACCOUNTS BASIS

(By fiscal year, in billions of dollars)

	1989 Actual	1989 Base	Projections 1990	1991	1992	1993	1994
Receipts							
Personal Tax and Nontax Receipts	413	440	490	530	567	604	644
Corporate Profits Tax Accruals	110	122	135	142	148	154	161
Indirect Business Tax and Nontax Accruals	57	58	60	58	58	60	62
Contributions for Social Insurance	385	417	448	479	510	541	575
Total Receipts	965	1,037	1,133	1,209	1,283	1,359	1,443
Expenditures							
Purchases of Goods and Services							
Defense	297	302	311	323	336	350	364
Nondefense	81	93	105	111	115	120	125
Total	378	395	416	435	452	470	489
Transfer Payments	434	464	505	545	586	628	671
Grants-in-Aid to State and Local Governments	109	116	124	130	137	145	154
Net Interest Paid	150	170	184	194	199	205	208
Subsidies Less Current Surplus of Government Enterprises	35	33	26	23	24	21	21
Total Expenditures	1,106	1,177	1,255	1,326	1,398	1,469	1,543
Deficit							
Deficit	141	140	122	117	115	110	101

SOURCE: Congressional Budget Office.

APPENDIX E

THE MODEL UNDERLYING THE ANALYSIS IN CHAPTER III

Chapter III presented illustrative calculations of how changes in national saving, resulting from choosing different deficit targets, might affect future growth in output and living standards. It also demonstrated the slowing in output growth, and in growth of consumption per capita, likely to be produced by current demographic trends, especially by the retirement of the baby-boom generation early in the next century. These calculations were made using a simple growth-accounting model developed by Brookings Institution economists to examine the effects of baby-boom retirement on the Social Security system.[1] The Brookings Institution model consists of five sectors: nonfarm business, agriculture, government, nonprofit institutions, and private households. The nonfarm business sector, by far the largest, is treated in greatest detail, and output in that sector responds to changes in saving as described below. Output in the other sectors is assumed to be almost unaffected by saving.

How Nonfarm Business Output Is Determined

Output in the nonfarm business sector is generated by labor and capital inputs, together with an assumed growth in total factor productivity that reflects (in the base case) assumed technical progress. Labor inputs are the same as the Social Security Administration's II-B assumptions described in Chapter III. Capital accumulation in this sector is derived in the first place from assumptions about private saving and government saving, which together define aggregate gross investment. Fixed investment in the housing and farm sectors, and inventory change, are calculated to be sufficient to keep the corresponding real asset stocks constant relative to output. After allowing for these other uses of investment, and for depreciation, the remainder of savings is available for capital accumulation in the nonfarm business sector.

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[1] Henry J. Aaron, Barry P. Bosworth, and Gary Burtless, *Can America Afford to Grow Old?* (Washington, D.C.: Brookings Institution, 1989), Appendix B.

The production function that relates output to inputs in the nonfarm business sector has two important implications:

- That the incomes of labor and capital are constant shares of output, two-thirds and one-third respectively; and
- That the contributions of labor and capital to growth in nonfarm business output are weighted by these income shares.

Thus the production function produces results that are consistent with the growth-accounting framework introduced in Chapter III.

Baseline Assumptions

The assumptions underlying the calculations in Chapter III are, like those in the study by the Brookings economists, based on mid-range economic assumptions used by the actuaries of the Social Security Administration. Growth rates for the labor force, population, and real GNP come directly from these assumptions. Capital accumulation is derived from the assumption that gross private saving will be a constant proportion of GNP. The federal deficit is held at zero after 1993.

Given these methods, the growth of total factor productivity for the projection period is inferred using the relationship that the sum of contributions to output equals total output. That is, total factor productivity is a residual after output, labor input, and capital input are calculated using the constant saving-rate assumptions. The inferred growth in total factor productivity is about 1 percent per year in the projection period, consistent with historical estimates. On average, it has grown at a rate of about 0.9 percent per year since 1950, faster in the earlier part of the period but at only about 0.4 percent per year since 1970.

In the estimates of fiscal policy effects on consumption possibilities, the model was used both in its basic form and with an adjustment for the case where saving enhances productivity. The productivity enhancement was introduced by allowing capital accumulation to increase total factor productivity by an amount equivalent to the direct effect of capital on output, thus roughly doubling the effect of saving on future output levels.

The Rest of the World

The model described above does not directly take account of an important aspect of the U.S. economy: capital flows between the United States and the rest of the world. This limitation, however, may not have a significant effect on the results presented in Chapter III, if the rate of return on investment overseas is similar to that on investment in the United States.

Capital imports have been very important in the 1980s in reducing the impact of low domestic saving on domestic fixed investment. Correspondingly, if national saving were to be substantially increased in the future, some of it could flow into investment overseas (or to reducing liabilities to foreigners) rather than being used for higher real capital accumulation in the United States.

Such an outflow would reduce projected U.S. output in proportion to the return on capital. But GNP also reflects income earned on net lending to foreigners, which in this case (neglecting taxes) would be increased by roughly the same amount as the production lost in the United States. Foreign corporate taxes introduce some discrepancy into these calculations, since even when after-tax returns are the same in the United States as abroad, income taxed at home generates revenue that stays here while income taxed abroad generates tax revenues for foreign governments. Thus, if increases in national saving led to increased net lending to foreigners, the impact on GNP might be slightly smaller than if they led to higher capital accumulation at home.

Capital outflows could have a larger effect on real wage rates, however. This is because capital accumulation in the United States increases the stock of capital per worker and makes workers more productive, increasing their real wages. Capital outflows would increase real wage rates abroad.

APPENDIX F

HISTORICAL BUDGET DATA

Historical budget data consistent with the budget projections in Chapter II are shown in this appendix for fiscal years 1962 through 1988. The data are shown both in nominal dollars and as a percentage of gross national product (GNP). Federal revenues, outlays, deficit or surplus, and debt held by the public are shown in Tables F-1 and F-2. Revenues and outlays contain both on-budget and off-budget components. All federal government receipts and outlays are on-budget except those for Social Security, which is excluded under the provisions of the Balanced Budget and Emergency Deficit Control Act of 1985.

The major sources of federal revenue (including off-budget revenues) are presented in Tables F-3 and F-4. Social insurance taxes and contributions include employer and employee payments for Social Security, Medicare, Railroad Retirement, and Unemployment Insurance, and pension contributions by federal workers. Excise taxes are levied on certain products and services, such as gasoline, alcohol, and air travel. The windfall profit tax on domestic oil producers was enacted in 1980, and is classified as an excise tax. Miscellaneous receipts consist mainly of deposits of earnings by the Federal Reserve System.

Total on- and off-budget outlays for major spending categories are shown in Tables F-5 and F-6. National defense and net interest are identical to the budget functions with the same titles (functions 050 and 900, respectively). Entitlements and other mandatory spending include programs for which spending is governed by laws making all who meet certain requirements eligible to receive payments. Additional detail on entitlement programs is shown in Tables F-7 and F-8. Nondefense discretionary spending consists of all programs other than defense that are controlled through the appropriation process. Offsetting receipts include the federal government's contribution toward employee retirement, fees and charges such as Medicare premiums, and receipts from the use of federally controlled land and offshore territory.

TABLE F-1. REVENUES, OUTLAYS, DEFICIT, AND DEBT HELD BY THE PUBLIC, FISCAL YEARS 1962-1988

(In billions of dollars)

Fiscal Year	Revenues			Outlays			Deficit (-) or Surplus	Debt Held by the Public
	On-Budget	Off-Budget	Total	On-Budget	Off-Budget	Total		
1962	87.4	12.3	99.7	93.3	13.5	106.8	-7.1	248.0
1963	92.4	14.2	106.6	96.4	15.0	111.3	-4.8	254.0
1964	96.2	16.4	112.6	102.8	15.7	118.5	-5.9	256.8
1965	100.1	16.7	116.8	101.7	16.5	118.2	-1.4	260.8
1966	111.7	19.1	130.8	114.8	19.7	134.5	-3.7	263.7
1967	124.4	24.4	148.8	137.0	20.4	157.5	-8.6	266.6
1968	128.1	24.9	153.0	155.8	22.3	178.1	-25.2	289.5
1969	157.9	29.0	186.9	158.4	25.2	183.6	3.2	278.1
1970	159.3	33.5	192.8	168.0	27.6	195.6	-2.8	283.2
1971	151.3	35.8	187.1	177.3	32.8	210.2	-23.0	303.0
1972	167.4	39.9	207.3	193.8	36.9	230.7	-23.4	322.4
1973	184.7	46.1	230.8	200.1	45.6	245.7	-14.9	340.9
1974	209.3	53.9	263.2	217.3	52.1	269.4	-6.1	343.7
1975	216.6	62.5	279.1	271.9	60.4	332.3	-53.2	394.7
1976	231.7	66.4	298.1	302.2	69.6	371.8	-73.7	477.4
1977	278.7	76.8	355.6	328.5	80.7	409.2	-53.6	549.1
1978	314.2	85.4	399.6	369.1	89.7	458.7	-59.2	607.1
1979	365.3	98.0	463.3	403.5	100.0	503.5	-40.2	639.8
1980	403.9	113.2	517.1	476.6	114.3	590.9	-73.8	709.3
1981	469.1	130.2	599.3	543.0	135.2	678.2	-78.9	784.8
1982	474.3	143.5	617.8	594.3	151.4	745.7	-127.9	919.2
1983	453.2	147.3	600.6	661.2	147.1	808.3	-207.8	1,131.0
1984	500.4	166.1	666.5	686.0	165.8	851.8	-185.3	1,300.0
1985	547.9	186.2	734.1	769.5	176.8	946.3	-212.3	1,499.4
1986	568.9	200.2	769.1	806.8	183.5	990.3	-221.2	1,736.2
1987	640.8	213.4	854.1	810.0	193.9	1,003.8	-149.7	1,888.1
1988	667.5	241.5	909.0	861.4	202.7	1,064.1	-155.1	2,050.2

SOURCE: Congressional Budget Office.

TABLE F-2. REVENUES, OUTLAYS, DEFICIT, AND DEBT HELD BY THE PUBLIC, FISCAL YEARS 1962-1988

(As a percentage of GNP)

Fiscal Year	Revenues			Outlays			Deficit (-) or Surplus	Debt Held by the Public
	On-Budget	Off-Budget	Total	On-Budget	Off-Budget	Total		
1962	15.7	2.2	17.9	16.7	2.4	19.2	-1.3	44.5
1963	15.7	2.4	18.1	16.4	2.5	18.9	-0.8	43.2
1964	15.3	2.6	17.9	16.3	2.5	18.8	-0.9	40.8
1965	14.9	2.5	17.4	15.1	2.5	17.6	-0.2	38.8
1966	15.1	2.6	17.7	15.5	2.7	18.2	-0.5	35.7
1967	15.7	3.1	18.7	17.2	2.6	19.8	-1.1	33.6
1968	15.1	2.9	18.0	18.3	2.6	21.0	-3.0	34.1
1969	17.0	3.1	20.1	17.0	2.7	19.8	0.3	29.9
1970	16.1	3.4	19.5	17.0	2.8	19.8	-0.3	28.6
1971	14.3	3.4	17.7	16.8	3.1	19.9	-2.2	28.7
1972	14.5	3.5	18.0	16.8	3.2	20.0	-2.0	28.0
1973	14.4	3.6	18.0	15.6	3.6	19.2	-1.2	26.6
1974	14.8	3.8	18.6	15.3	3.7	19.0	-0.4	24.3
1975	14.2	4.1	18.3	17.9	4.0	21.8	-3.5	25.9
1976	13.6	3.9	17.6	17.8	4.1	21.9	-4.3	28.1
1977	14.4	4.0	18.4	17.0	4.2	21.2	-2.8	28.4
1978	14.5	3.9	18.4	17.0	4.1	21.1	-2.7	28.0
1979	14.9	4.0	18.9	16.5	4.1	20.6	-1.6	26.1
1980	15.1	4.2	19.4	17.8	4.3	22.1	-2.8	26.6
1981	15.7	4.4	20.1	18.2	4.5	22.7	-2.6	26.3
1982	15.1	4.6	19.7	18.9	4.8	23.8	-4.1	29.3
1983	13.6	4.4	18.1	19.9	4.4	24.3	-6.3	34.0
1984	13.6	4.5	18.1	18.6	4.5	23.1	-5.0	35.3
1985	13.9	4.7	18.6	19.5	4.5	23.9	-5.4	37.9
1986	13.6	4.8	18.4	19.3	4.4	23.7	-5.3	41.5
1987	14.5	4.8	19.3	18.3	4.4	22.6	-3.4	42.6
1988	14.0	5.1	19.0	18.0	4.2	22.3	-3.2	42.9

SOURCE: Congressional Budget Office.

TABLE F-3. REVENUES, BY MAJOR SOURCE, FISCAL YEARS 1962-1988 (In billions of dollars)

Fiscal Year	Individual Income Taxes	Corporate Income Taxes	Social Insurance Taxes and Contributions	Excise Taxes	Estate and Gift Taxes	Customs Duties	Miscellaneous Receipts	Total Revenues
1962	45.6	20.5	17.0	12.5	2.0	1.1	0.8	99.7
1963	47.6	21.6	19.8	13.2	2.2	1.2	1.0	106.6
1964	48.7	23.5	22.0	13.7	2.4	1.3	1.1	112.6
1965	48.8	25.5	22.2	14.6	2.7	1.4	1.6	116.8
1966	55.4	30.1	25.5	13.1	3.1	1.8	1.9	130.8
1967	61.5	34.0	32.6	13.7	3.0	1.9	2.1	148.8
1968	68.7	28.7	33.9	14.1	3.1	2.0	2.5	153.0
1969	87.2	36.7	39.0	15.2	3.5	2.3	2.9	186.9
1970	90.4	32.8	44.4	15.7	3.6	2.4	3.4	192.8
1971	86.2	26.8	47.3	16.6	3.7	2.6	3.9	187.1
1972	94.7	32.2	52.6	15.5	5.4	3.3	3.6	207.3
1973	103.2	36.2	63.1	16.3	4.9	3.2	3.9	230.8
1974	119.0	38.6	75.1	16.8	5.0	3.3	5.4	263.2
1975	122.4	40.6	84.5	16.6	4.6	3.7	6.7	279.1
1976	131.6	41.4	90.8	17.0	5.2	4.1	8.0	298.1
1977	157.6	54.9	106.5	17.5	7.3	5.2	6.5	355.6
1978	181.0	60.0	121.0	18.4	5.3	6.6	7.4	399.6
1979	217.8	65.7	138.9	18.7	5.4	7.4	9.3	463.3
1980	244.1	64.6	157.8	24.3	6.4	7.2	12.7	517.1
1981	285.9	61.1	182.7	40.8	6.8	8.1	13.8	599.3
1982	297.7	49.2	201.5	36.3	8.0	8.9	16.2	617.8
1983	288.9	37.0	209.0	35.3	6.1	8.7	15.6	600.6
1984	298.4	56.9	239.4	37.4	6.0	11.4	17.0	666.5
1985	334.5	61.3	265.2	36.0	6.4	12.1	18.5	734.1
1986	349.0	63.1	283.9	32.9	7.0	13.3	19.9	769.1
1987	392.6	83.9	303.3	32.5	7.5	15.0	19.3	854.1
1988	401.2	94.2	334.3	35.5	7.6	16.2	19.9	909.0

SOURCE: Congressional Budget Office.

TABLE F-4. REVENUES, BY MAJOR SOURCE, FISCAL YEARS 1962-1988 (As a percentage of GNP)

Fiscal Year	Individual Income Taxes	Corporate Income Taxes	Social Insurance Taxes and Contributions	Excise Taxes	Estate and Gift Taxes	Customs Duties	Miscellaneous Receipts	Total Revenues
1962	8.2	3.7	3.1	2.2	0.4	0.2	0.2	17.9
1963	8.1	3.7	3.4	2.2	0.4	0.2	0.2	18.1
1964	7.7	3.7	3.5	2.2	0.4	0.2	0.2	17.9
1965	7.3	3.8	3.3	2.2	0.4	0.2	0.2	17.4
1966	7.5	4.1	3.5	1.8	0.4	0.2	0.3	17.7
1967	7.7	4.3	4.1	1.7	0.4	0.2	0.3	18.7
1968	8.1	3.4	4.0	1.7	0.4	0.2	0.3	18.0
1969	9.4	3.9	4.2	1.6	0.4	0.2	0.3	20.1
1970	9.1	3.3	4.5	1.6	0.4	0.2	0.3	19.5
1971	8.2	2.5	4.5	1.6	0.4	0.2	0.4	17.7
1972	8.2	2.8	4.6	1.3	0.5	0.3	0.3	18.0
1973	8.1	2.8	4.9	1.3	0.4	0.2	0.3	18.0
1974	8.4	2.7	5.3	1.2	0.4	0.2	0.4	18.6
1975	8.0	2.7	5.6	1.1	0.3	0.2	0.4	18.3
1976	7.7	2.4	5.3	1.0	0.3	0.2	0.5	17.6
1977	8.2	2.8	5.5	0.9	0.4	0.3	0.3	18.4
1978	8.3	2.8	5.6	0.8	0.2	0.3	0.3	18.4
1979	8.9	2.7	5.7	0.8	0.2	0.3	0.4	18.9
1980	9.1	2.4	5.9	0.9	0.2	0.3	0.5	19.4
1981	9.6	2.0	6.1	1.4	0.2	0.3	0.5	20.1
1982	9.5	1.6	6.4	1.2	0.3	0.3	0.5	19.7
1983	8.7	1.1	6.3	1.1	0.2	0.3	0.5	18.1
1984	8.1	1.5	6.5	1.0	0.2	0.3	0.5	18.1
1985	8.5	1.6	6.7	0.9	0.2	0.3	0.5	18.6
1986	8.3	1.5	6.8	0.8	0.2	0.3	0.5	18.4
1987	8.9	1.9	6.8	0.7	0.2	0.3	0.4	19.3
1988	8.4	2.0	7.0	0.7	0.2	0.3	0.4	19.0

SOURCE: Congressional Budget Office.

TABLE F-5. OUTLAYS FOR MAJOR SPENDING CATEGORIES, FISCAL YEARS 1962-1988 (In billions of dollars)

Fiscal Year	National Defense	Entitlements and Other Mandatory Spending	Nondefense Discretionary Spending	Net Interest	Offsetting Receipts	Total Outlays
1962	52.3	30.5	24.1	6.9	-7.0	106.8
1963	53.4	33.0	25.3	7.7	-8.1	111.3
1964	54.8	34.3	29.1	8.2	-7.8	118.5
1965	50.6	34.5	32.5	8.6	-8.0	118.2
1966	58.1	37.2	38.4	9.4	-8.5	134.5
1967	71.4	45.0	41.1	10.3	-10.3	157.5
1968	81.9	52.1	43.8	11.1	-10.8	178.1
1969	82.5	58.4	41.2	12.7	-11.1	183.6
1970	81.7	66.2	45.1	14.4	-11.6	195.6
1971	78.9	80.6	50.1	14.8	-14.2	210.2
1972	79.2	94.2	56.0	15.5	-14.2	230.7
1973	76.7	110.3	59.5	17.3	-18.1	245.7
1974	79.3	124.0	65.9	21.4	-21.3	269.4
1975	86.5	155.8	85.3	23.2	-18.5	332.3
1976	89.6	182.2	93.0	26.7	-19.7	371.8
1977	97.2	197.2	106.5	29.9	-21.6	409.2
1978	104.5	217.5	124.3	35.4	-23.0	458.7
1979	116.3	235.7	134.8	42.6	-26.1	503.5
1980	134.0	278.2	156.6	52.5	-30.3	590.9
1981	157.5	321.0	170.3	68.7	-39.3	678.2
1982	185.3	357.5	155.1	85.0	-37.2	745.7
1983	209.9	399.0	157.5	89.8	-47.8	808.3
1984	227.4	394.8	165.7	111.1	-47.2	851.8
1985	252.7	437.8	175.8	129.4	-49.5	946.3
1986	273.4	455.4	174.1	136.0	-48.6	990.3
1987	282.0	473.4	163.9	138.6	-54.1	1,003.8
1988	290.3	501.2	175.7	151.7	-54.9	1,064.1

SOURCE: Congressional Budget Office.

TABLE F-6. OUTLAYS FOR MAJOR SPENDING CATEGORIES, FISCAL YEARS 1962-1988 (As a percentage of GNP)

Fiscal Year	National Defense	Entitlements and Other Mandatory Spending	Nondefense Discretionary Spending	Net Interest	Offsetting Receipts	Total Outlays
1962	9.4	5.5	4.3	1.2	-1.3	19.2
1963	9.1	5.6	4.3	1.3	-1.4	18.9
1964	8.7	5.4	4.6	1.3	-1.2	18.8
1965	7.5	5.1	4.8	1.3	-1.2	17.6
1966	7.9	5.0	5.2	1.3	-1.2	18.2
1967	9.0	5.7	5.2	1.3	-1.3	19.8
1968	9.6	6.1	5.2	1.3	-1.3	21.0
1969	8.9	6.3	4.4	1.4	-1.2	19.8
1970	8.2	6.7	4.6	1.5	-1.2	19.8
1971	7.5	7.6	4.7	1.4	-1.3	19.9
1972	6.9	8.2	4.9	1.3	-1.2	20.0
1973	6.0	8.6	4.6	1.4	-1.4	19.2
1974	5.6	8.8	4.7	1.5	-1.5	19.0
1975	5.7	10.2	5.6	1.5	-1.2	21.8
1976	5.3	10.7	5.5	1.6	-1.2	21.9
1977	5.0	10.2	5.5	1.5	-1.1	21.2
1978	4.8	10.0	5.7	1.6	-1.1	21.1
1979	4.8	9.6	5.5	1.7	-1.1	20.6
1980	5.0	10.4	5.9	2.0	-1.1	22.1
1981	5.3	10.7	5.7	2.3	-1.3	22.7
1982	5.9	11.4	4.9	2.7	-1.2	23.8
1983	6.3	12.0	4.7	2.7	-1.4	24.3
1984	6.2	10.7	4.5	3.0	-1.3	23.1
1985	6.4	11.1	4.4	3.3	-1.3	23.9
1986	6.5	10.9	4.2	3.2	-1.2	23.7
1987	6.4	10.7	3.7	3.1	-1.2	22.6
1988	6.1	10.5	3.7	3.2	-1.1	22.3

SOURCE: Congressional Budget Office.

TABLE F-7. OUTLAYS FOR ENTITLEMENTS AND OTHER MANDATORY SPENDING, FISCAL YEARS 1962-1988 (In billions of dollars)

Fiscal Year	Medicaid	Other Means-Tested Programs	Social Security	Medicare	Other Retirement and Disability	Unemployment Compensation	Other Non-Means-Tested Programs	Total Entitlements and Other Mandatory Spending
1962	0.1	4.2	14.1	--	2.6	3.5	5.9	30.5
1963	0.2	4.6	15.5	--	2.9	3.6	6.3	33.0
1964	0.2	4.8	16.3	--	3.3	3.4	6.3	34.3
1965	0.3	5.0	17.1	--	3.5	2.7	5.9	34.5
1966	0.8	5.0	20.2	0.0	4.1	2.2	4.9	37.2
1967	1.2	5.0	21.3	3.2	4.8	2.3	7.2	45.0
1968	1.8	5.7	23.0	5.1	5.7	2.2	8.7	52.1
1969	2.3	6.4	26.5	6.3	5.2	2.3	9.4	58.4
1970	2.7	7.4	29.4	6.8	6.6	3.1	10.2	66.2
1971	3.4	10.0	34.8	7.5	8.2	5.8	10.9	80.6
1972	4.6	11.7	39.0	8.4	9.5	6.7	14.3	94.2
1973	4.6	11.5	47.9	9.0	11.5	4.9	21.0	110.3
1974	5.8	13.9	54.5	10.8	13.6	5.6	19.8	124.0
1975	6.8	18.9	63.1	14.1	16.4	12.8	23.6	155.8
1976	8.6	22.2	72.2	17.0	18.6	18.6	25.1	182.2
1977	9.9	24.0	83.2	20.7	21.2	14.3	24.0	197.2
1978	10.7	25.3	91.8	25.0	23.2	10.8	30.7	217.5
1979	12.4	27.1	101.9	28.9	27.3	9.8	28.4	235.8
1980	14.0	32.6	117.1	33.9	31.5	16.9	32.2	278.2
1981	16.8	37.8	138.0	41.3	36.6	18.3	32.2	321.0
1982	17.4	38.1	154.1	49.2	39.8	22.2	36.7	357.5
1983	19.0	40.6	168.6	55.5	41.9	29.7	43.6	399.0
1984	20.1	41.6	176.1	61.0	43.3	16.8	36.0	394.8
1985	22.7	43.7	186.5	69.8	44.0	15.8	55.4	437.8
1986	25.0	45.9	196.7	74.2	46.7	16.1	50.7	455.4
1987	27.4	46.5	205.2	79.9	49.2	17.1	49.1	473.4
1988	30.5	51.2	217.1	85.7	54.2	13.6	48.9	501.2

SOURCE: Congressional Budget Office.

TABLE F-8. OUTLAYS FOR ENTITLEMENTS AND OTHER MANDATORY SPENDING, FISCAL YEARS 1962-1988 (As a percentage of GNP)

Fiscal Year	Medicaid	Other Means-Tested Programs	Social Security	Medicare	Other Retirement and Disability	Unemployment Compensation	Other Non-Means-Tested Programs	Total Entitlements and Other Mandatory Spending
1962	0.0	0.8	2.5	--	0.5	0.6	1.1	5.5
1963	0.0	0.8	2.6	--	0.5	0.6	1.1	5.6
1964	0.0	0.8	2.6	--	0.5	0.5	1.0	5.4
1965	0.0	0.7	2.5	--	0.5	0.4	0.9	5.1
1966	0.1	0.7	2.7	0.0	0.6	0.3	0.7	5.0
1967	0.1	0.6	2.7	0.4	0.6	0.3	0.9	5.7
1968	0.2	0.7	2.7	0.6	0.7	0.3	1.0	6.1
1969	0.2	0.7	2.9	0.7	0.6	0.2	1.0	6.3
1970	0.3	0.7	3.0	0.7	0.7	0.3	1.0	6.7
1971	0.3	0.9	3.3	0.7	0.8	0.5	1.0	7.6
1972	0.4	1.0	3.4	0.7	0.8	0.6	1.2	8.2
1973	0.4	0.9	3.7	0.7	0.9	0.4	1.6	8.6
1974	0.4	1.0	3.8	0.8	1.0	0.4	1.4	8.8
1975	0.4	1.2	4.1	0.9	1.1	0.8	1.6	10.2
1976	0.5	1.3	4.3	1.0	1.1	1.1	1.5	10.7
1977	0.5	1.2	4.3	1.1	1.1	0.7	1.2	10.2
1978	0.5	1.2	4.2	1.1	1.1	0.5	1.4	10.0
1979	0.5	1.1	4.2	1.2	1.1	0.4	1.2	9.6
1980	0.5	1.2	4.4	1.3	1.2	0.6	1.2	10.4
1981	0.6	1.3	4.6	1.4	1.2	0.6	1.1	10.7
1982	0.6	1.2	4.9	1.6	1.3	0.7	1.2	11.4
1983	0.6	1.2	5.1	1.7	1.3	0.9	1.3	12.0
1984	0.5	1.1	4.8	1.7	1.2	0.5	1.0	10.7
1985	0.6	1.1	4.7	1.8	1.1	0.4	1.4	11.1
1986	0.6	1.1	4.7	1.8	1.1	0.4	1.2	10.9
1987	0.6	1.0	4.6	1.8	1.1	0.4	1.1	10.7
1988	0.6	1.1	4.5	1.8	1.1	0.3	1.0	10.5

SOURCE: Congressional Budget Office.

APPENDIX G

MAJOR CONTRIBUTORS TO THE REVENUE AND SPENDING PROJECTIONS

The following analysts prepared the revenue and spending projections in this report:

Revenue Projections

Mark Booth	Corporate income taxes, Federal Reserve System earnings
Maureen Griffin	Social insurance contributions
Richard Kasten	Individual income taxes
Eric Nicholson	Excise taxes
Kathleen O'Connell	Individual income taxes, estate and gift taxes
Marianne Page	Customs duties, miscellaneous receipts
Linda Radey	Social insurance contributions, excise taxes
Frank Sammartino	Individual income taxes

Spending Projections

Defense and International Affairs

Eugene Bryton	Defense
Kent Christensen	International Affairs
Raymond Hall	Defense
Barbara Hollinshead	Defense
William Myers	Defense
Amy Plapp	Defense
Joseph Whitehill	International affairs
Ben Wolters	Defense

Spending Projections (continued)

Human Resources

Paul Cullinan	Social Security
Richard Curley	Supplemental Security Income, veterans' education
Cathy Ellman	Foreign Service Retirement
Alan Fairbank	Hospital Insurance
Holly Harvey	Suppmenentary Medical Insurance
Lori Housman	Public Health Service
Deborah Kalcevic	Education
Jean Kayser	Health programs
Julia Isaacs	Food Stamps, child nutrition
Donald Muse	Medicaid, Medicare
Michael Namian	Social services
Janice Peskin	Aid to Families with Dependent Children, child support enforcement
Michael Pogue	Unemployment Insurance, training programs, Civil Service Retirement
Kathleen Shepherd	Veterans' benefits

Natural and Physical Resources

Kim Cawley	Energy
Douglas Criscitello	Commerce, disaster relief and insurance
Peter Fontaine	Energy
Theresa Gullo	Water resources, conservation, and land management
James Hearn	General government, Agricultural Credit Insurance Fund, Outer Continental Shelf receipts
Hsin-Hui Hsu	Agriculture
Mary Maginniss	Deposit insurance
Eileen Manfredi	Agriculture

Spending Projections (continued)

Natural and Physical Resources (continued)

Marjorie Miller	Transportation, Federal Housing Administration
Marta Morgan	Community and regional development, general government
Andrew Morton	Agriculture
Deborah Reis	Recreation, pollution control water transportation
Mitchell Rosenfeld	Air transportation, justice, Postal Service
Brent Shipp	Housing and mortgage credit
Michael Sieverts	Science and space, justice, other natural resources

Other

Janet Airis	Appropriation bills
Edward Blau	Appropriation bills
Paul Christy	Other interest
David Elkes	National Income and Product Accounts
Betty Embrey	Appropriation bills
Kenneth Farris	Computer support
Danila Girerd	Credit budget
Glen Goodnow	Authorization bills
Vernon Hammett	Computer support
Sandra Hoffman	Computer support
Richard Krop	Civilian agency pay
Fritz Maier	Computer support
Rodney Rasmussen	Budget projections
Kathy Ruffing	Treasury borrowing, interest, and debt
Robert Sempsey	Appropriation bills
Jeff Swersey	Computer support
Karla Trujillo	Appropriation bills
Paula Wiliams	Computer support

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